

ORDER NO.CHM0604022CE

B24

# Service Manual

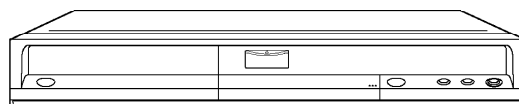
DVD Recorder

DMR-ES25P / DMR-ES25PC

Vol. 1

Colour

(S).....Silver Type



**Notes:** This model's RAM/Digital P.C.B. Module are - RFKNES25P(P)  
- RFKNES25PC(PC).

**Caution:**

Pairing of RAM Drive and Digital P.C.B. as "RAM/Digital P.C.B. Module" have to be replaced together. If the pairing is changed, RAM Drive unit has to be re-aligned. Because the alignment data for RAM Drive Unit is stored in Digital P.C.B..

## SPECIFICATIONS

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**⚠ WARNING**

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

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## **1. Safety Precaution**

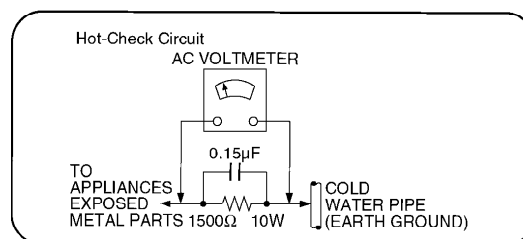
### **1.1. General guidelines**

- 1. When servicing, observe the original lead dress. If a short circuit is found, replace all parts which have been overheated or damaged by the short circuit.**
- 2. After servicing, see to it that all the protective devices such as insulation barriers, insulation papers shields are properly installed.**
- 3. After servicing, make the following leakage current checks to prevent the customer from being exposed to shock hazards.**

#### **1.1.1. Leakage current cold check**

- 1. Unplug the AC cord and connect a jumper between the two prongs on the plug.**
- 2. Measure the resistance value, with an ohmmeter, between the jumpered AC plug and each exposed metallic cabinet part on the equipment such as screwheads, connectors, control shafts, etc. When the exposed metallic part has a return path to the chassis, the reading should be between  $1\text{M } \Omega$  and  $5.2\text{M } \Omega$ . When the exposed metal does not have a return path to the chassis, the reading must be  $\infty$ .**

**Figure 1**



#### **1.1.2. Leakage current hot check / (See [Figure 1](#) .)**

1. Plug the AC cord directly into the AC outlet. Do not use an isolation transformer for this check.
2. Connect a 1.5k  $\Omega$  , 10 watts resistor, in parallel with a 0.15  $\mu$  F capacitors, between each exposed metallic part on the set and a good earth ground such as a water pipe, as shown in [Figure 1](#).
3. Use an AC voltmeter, with 1000 ohms/volt or more sensitivity, to measure the potential across the resistor.
4. Check each exposed metallic part, and measure the voltage at each point.
5. Reverse the AC plug in the AC outlet and repeat each of the above measurements.
6. The potential at any point should not exceed 0.75 volts RMS. A leakage current tester (Simpson Model 229 or equivalent) may be used to make the hot checks, leakage current must not exceed 1/2 milliampere. In case a measurement is outside of the limits specified, there is a possibility of a shock hazard, and the equipment should be repaired and rechecked before it is returned to the customer.

## 1.2. Caution for fuse replacement

(For English)

### CAUTION:

Replace with the same type fuse:

(Manufacturer: Hollyland, Type: 50T, 1.6A, 250V)

(For Canadian French)

### ATTENTION:

Utiliser un fusible de rechange de même type:

(Fabricant: Hollyland, Type: 50T, 1.6A, 250V)

## 2. Warning

### 2.1. Prevention of Electrostatic Discharge (ESD) to Electrostatic Sensitive (ES) Devices


Some semiconductor (solid state) devices can be damaged easily by static electricity. Such components commonly are called Electrostatic Sensitive (ES) Devices. Examples of typical ES devices are integrated circuits and some field-effect transistor-sand semiconductor "chip" components. The following techniques should be used to help reduce the incidence of component damage caused by electrostatic discharge (ESD).

1. Immediately before handling any semiconductor component or semiconductor-equipped assembly, drain off any ESD on your body by touching a known earth ground. Alternatively, obtain and

wear a commercially available discharging ESD wrist strap, which should be removed for potential shock reasons prior to applying power to the unit under test.

2. After removing an electrical assembly equipped with ES devices, place the assembly on a conductive surface such as aluminum foil, to prevent electrostatic charge buildup or exposure of the assembly.
  3. Use only a grounded-tip soldering iron to solder or unsolder ES devices.
  4. Use only an anti-static solder removal device. Some solder removal devices not classified as "anti-static (ESD protected)" can generate electrical charge sufficient to damage ES devices.
  5. Do not use freon-propelled chemicals. These can generate electrical charges sufficient to damage ES devices.
  6. Do not remove a replacement ES device from its protective package until immediately before you are ready to install it. (Most replacement ES devices are packaged with leads electrically shorted together by conductive foam, aluminum foil or comparable conductive material).
  7. Immediately before removing the protective material from the leads of a replacement ES device, touch the protective material to the chassis or circuit assembly into which the device will be installed.
- Caution**  
Be sure no power is applied to the chassis or circuit, and observe all other safety precautions.
8. Minimize bodily motions when handling unpackaged replacement ES devices. (Otherwise harmless motion such as the brushing together of your clothes fabric or the lifting of your foot from a carpeted floor can generate static electricity sufficient to damage an ES device).

#### IMPORTANT SAFETY NOTICE

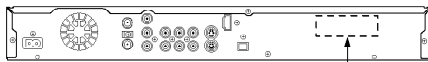
There are special components used in this equipment which are important for safety. These parts are marked by  in the schematic diagrams, Exploded Views and replacement parts list. It is essential that these critical parts should be replaced with manufacturer's specified parts to prevent shock, fire, or other hazards. Do not modify the original design without permission of manufacturer.

## 2.2. Precaution of Laser Diode

### CAUTION:

This product utilizes a laser diode with the unit turned "on", invisible laser radiation is emitted from the pickup lens.  
Wave length: 662 nm (DVDs)/780 nm (CDs)  
Maximum output radiation power from pickup: 100  $\mu$  W/VDE  
Laser radiation from the pickup lens is safety level, but be sure the followings:

1. Do not disassemble the optical pickup unit, since radiation from exposed laser diode is dangerous.
2. Do not adjust the variable resistor on the pickup unit. It was already adjusted.
3. Do not look at the focus lens using optical instruments.
4. Recommend not to look at pickup lens for a long time.



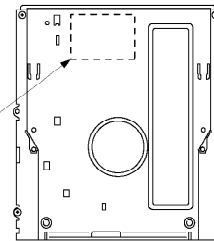
Product complies with DHHS Rules 21 CFR Subchapter J in effect at date of manufacture. Matsushita Electric Industrial Co., Ltd. Kadoma, Osaka, Japan

### ACHTUNG:

Dieses Produkt enthält eine Laserdiode.  
Im eingeschalteten Zustand wird unsichtbare Laserstrahlung von der Lasereinheit abgestrahlt.  
Wellenlänge: 662 nm (DVDs)/780 nm (CDs)  
Maximale Strahlungsleistung der Lasereinheit: 100  $\mu$  W/VDE  
Die Strahlung der Lasereinheit ist ungefährlich, wenn folgende Punkte beachtet werden:

1. Die Lasereinheit nicht zerlegen, da die Strahlung an der freigelegten Lasordiode gefährlich ist.
2. Den werkseitig justierten Einstellregler der Lasereinheit nicht verstellen.
3. Nicht mit optischen Instrumenten in die Fokussierlinse blicken.
4. Nicht über längere Zeit in die Fokussierlinse blicken.

<b>DANGER</b> - VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN. AVOID DIRECT EXPOSURE TO BEAM.	注意 - 打开时有可见及不可见激光辐射。避免激光辐射。注意 - 打开时有可见及不可见激光辐射。避免激光辐射。
<b>CAUTION</b> - CLASS II LASER. INVISIBLE LASER RADIATION WHEN OPEN. AVOID EXPOSURE TO THE BEAM.	警告 - 二类激光。不可见激光辐射。避免激光辐射。避免激光辐射。
<b>ATTENTION</b> - RAYONNEMENT LASER. VISIBLE ET INVISIBLE. CLASSE II EN CAS D'EXPOSITION. EVITE L'EXPOSITION AU FASCEAU.	注意 - 激光辐射。可见及不可见。二类激光。避免激光辐射。避免激光辐射。
<b>FORSIGTIG</b> - SYNLIG OG ØSYNLIG LASERSTRÅLING. KLASSE II NÅR LÆGGET OP. ADVARSEL - SYNLIG OG ØSYNLIG LASERSTRÅLING. KLASSE II NÅR LÆGGET OP.	注意 - 可见及不可见激光辐射。二类激光。避免激光辐射。避免激光辐射。
<b>VARO</b> - KÄÄRREISSÄ OLET ALTIINA LUOKAN II LASERVAURON VAIKKOAVALOITUKSEEN LASERVAURON VAURON VAIKKOAVALOITUKSEEN.	警告 - 二类激光。避免激光辐射。避免激光辐射。
<b>VARO</b> - KLASSE II SYNLIG OG ØSYNLIG LASERSTRÅLING. NÅR DENNA DEL ÅPENS, UNNGÅ UTSATTELSE FOR STRÅLING.	警告 - 二类激光。避免激光辐射。避免激光辐射。
<b>VORSICHT</b> - SICHTBARE UND UNSICHTBARE LASERSTRAHLUNG. KLASSE II, WENN ABGEFÜHRT GEÖFFNET. NICHT DEM STRAHLEN AUSSETZEN.	警告 - 可见及不可见激光辐射。二类激光。避免激光辐射。避免激光辐射。
<b>CAUTION</b> - VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN. AVOID EXPOSURE TO THE BEAM.	警告 - 二类激光。避免激光辐射。避免激光辐射。
<b>ATTENTION</b> - RAYONNEMENT LASER. VISIBLE ET INVISIBLE. CLASSE II EN CAS D'EXPOSITION. EVITE L'EXPOSITION AU FASCEAU.	注意 - 激光辐射。可见及不可见。二类激光。避免激光辐射。避免激光辐射。
<b>ADVARSEL</b> - SYNLIG OG ØSYNLIG LASERSTRÅLING. VED ÅPNING UNNGÅ UTSATTELSE FOR STRÅLING.	警告 - 二类激光。避免激光辐射。避免激光辐射。
<b>VARO</b> - KÄÄRREISSÄ OLET ALTIINA LASERVAURON VAIKKOAVALOITUKSEEN LASERVAURON VAURON VAIKKOAVALOITUKSEEN.	警告 - 二类激光。避免激光辐射。避免激光辐射。
<b>VARO</b> - KLASSE II SYNLIG OG ØSYNLIG LASERSTRÅLING. NÅR DENNA DEL ÅPENS, UNNGÅ UTSATTELSE FOR STRÅLING.	警告 - 二类激光。避免激光辐射。避免激光辐射。
<b>VORSICHT</b> - SICHTBARE UND UNSICHTBARE LASERSTRAHLUNG. WENN ABGEFÜHRT GEÖFFNET, NICHT DEM STRAHLEN AUSSETZEN.	警告 - 可见及不可见激光辐射。二类激光。避免激光辐射。避免激光辐射。
<b>ADVARSEL</b> - SYNLIG OG ØSYNLIG LASERSTRÅLING. NÅR ÅPENS, UNNGÅ UTSATTELSE FOR STRÅLING.	警告 - 二类激光。避免激光辐射。避免激光辐射。



### CAUTION!

THIS PRODUCT UTILIZES A LASER.  
USE OF CONTROLS OR ADJUSTMENTS OR PERFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED HEREIN MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.

## 2.3. Service caution based on legal restrictions

### 2.3.1. General description about Lead Free Solder (PbF)

The lead free solder has been used in the mounting process of all electrical components on the printed circuit boards used for this equipment in considering the globally environmental conservation.

The normal solder is the alloy of tin (Sn) and lead (Pb). On the other hand, the lead free solder is the alloy mainly consists of tin (Sn), silver (Ag) and Copper (Cu), and the melting point of the lead free solder is higher approx.30 degrees C (86°F) more than that of the normal solder.

Definition of PCB Lead Free Solder being used

The letter of "PbF" is printed either foil side or components side on the PCB using the lead free solder.  
(See right figure)

PbF

Service caution for repair work using Lead Free Solder (PbF)

- The lead free solder has to be used when repairing the equipment for which the lead free solder is used.

(Definition: The letter of "PbF" is printed on the PCB using the

**lead free solder.)**

- **To put lead free solder, it should be well molten and mixed with the original lead free solder.**
- **Remove the remaining lead free solder on the PCB cleanly for soldering of the new IC.**
- **Since the melting point of the lead free solder is higher than that of the normal lead solder, it takes the longer time to melt the lead free solder.**
- **Use the soldering iron (more than 70W) equipped with the temperature control after setting the temperature at 350±30 degrees C (662±86°F).**

**Recommended Lead Free Solder (Service Parts Route.)**

- **The following 3 types of lead free solder are available through the service parts route.**

**RFKZ03D01K----- (0.3mm 100g Reel)**

**RFKZ06D01K----- (0.6mm 100g Reel)**

**RFKZ10D01K----- (1.0mm 100g Reel)**

#### **Note**

**\* Ingredient: tin (Sn), 96.5%, silver (Ag) 3.0%, Copper (Cu) 0.5%, Cobalt (Co) / Germanium (Ge) 0.1 to 0.3%**

## **3. Service Navigation**

### **3.1. Service Information**

This service manual contains technical information which will allow service personnel's to understand and service this model.

Please place orders using the parts list and not the drawing reference numbers.

If the circuit is changed or modified, this information will be followed by supplement service manual to be filed with original service manual.

- 1) This service manual does not contain the following information, because of the impossibility of servicing at component level.

\* Schematic Diagram, Block Diagram and P.C.B. layout of RAM/Digital P.C.B. Module.

\* Parts List for individual parts of RAM/Digital P.C.B. Module.

\* Exploded View and Parts List for individual parts of RAM/Digital P.C.B. Module.

- 2) The following category are recycle module part. Please send them to Central Repair Center.

\* RAM/Digital P.C.B. Module (ES25P:RFKNES25P, ES25PC:RFKNES25PC)

## **4. Specifications**

Power supply	AC120 V, 60 Hz				
Power consumption	Approx. 21 W				
Power consumption in standby mode	Approx. 2.1 W (Shipping condition) Approx. 6.1 W (User setting: Quick Start: On)				
Recording system	DVD-RAM: DVD Video Recording format DVD-R: DVD-Video format DVD-R DL (Dual Layer): DVD-Video format DVD-RW: DVD-Video format +R +R DL (Double Layer) +RW				
Optical pick up	System with 1 lens, 2 integration units (662 nm wavelength for DVDs, 780 nm wavelength for CDs)				
Recordable discs	DVD-RAM: Ver.2.0 Ver.2.1/ 3x-SPEED DVD-RAM Revision 1.0 Ver.2.2/ 5x-SPEED DVD-RAM Revision 2.0 DVD-R: for General Ver. 2.0 for General Ver. 2.0/ 4x-SPEED DVD-R Revision 1.0 for General Ver. 2 x/ 8x-SPEED DVD-R Revision 3.0 for General Ver. 2.x/ 16x-SPEED DVD R Revision 6.0 for DL Ver. 3.0 for DL Ver. 3.x/ 4x-SPEED DVD-R for DL Revision 1.0 DVD-RW: Ver. 1.1 Ver. 1.x/ 2x-SPEED DVD-RW Revision 1.0 Ver. 1.x/ 4x-SPEED DVD-RW Revision 2.0 Ver. 1.x/ 6x-SPEED DVD-RW Revision 3.0 +R: Ver. 1.0 Ver. 1.1 Ver. 1.2 Ver. 1.3 for DL Ver. 1.0 +RW: Ver. 1.1 Ver. 1.2/ 4x-SPEED				
Quick Start for Recording (Quick Start: ON)	1 Sec. Quick Start for Recording on DVD-RAM* *From the power off state, recording on DVD-RAM starts about 1 second after first pressing the power button and then sequentially pressing the REC button (Quick Start Mode). (When connecting to TV using Video or S-Video terminal)				
Recording time	Max. 8 hours (using 4.7 GB disc) XP : Approx. 1 hour SP : Approx. 2 hours LP : Approx. 4 hours EP : Approx. 6 hours/8 hours				
Approx.					
Recording Mode	DVD-RAM		DVD-R/ DVD-RW/ +R/+RW	DVD-R DL/+R DL 8.5GB	
	4.7GB	9.4GB (Double Sided)	4.7GB	First layer (L0)	Second layer (L1)
XP High picture quality recording mode	1 hour	2 hours	1 hour	55 minis	50 minis
SP Standard recording mode	2 hours	4 hours	2 hours	1 hour 50 minis	1 hour 40 minis
LP Long recording mode	4 hours	8 hours	4 hours	3 hours 40 minis	3 hours 20 minis
EP Extra long recording mode(6hours)	6 hours	12 hours	6 hours	5 hours 30 minis	5 hours 15 minis
EP Extra long recording mode(8hours)	8 hours	16 hours	8 hours	7 hours 25 minis	6 hours 50 minis

Region number	Region No.1	
Playable discs	DVD-RAM:	DVD Video Recording format
	DVD-R:	DVD-Video format
	DVD-R DL (Dual Layer):	DVD Video format
	DVD-RW:	DVD-Video format, DVD Video Recording format
	+R	
	+R DL (Double Layer)	
	+RW	
	DVD-Video	DVD-Audio
	CD-Audio (CD-DA)	Video CD
	CD-R/ CD-RW (CD-DA, Video CD, MP3, JPEG)	
Compression Method	MP3 Format: ISO9660 level1 or 2 (except for extended formats), Joliet Compatible compression rate: 32kbps ~ 320kbps Compatible sampling rate: 16kHz, 22.05kHz, 24kHz, 32kHz, 44.1kHz, 48kHz This unit is not compatible with ID3 tags. CD (JPEG) Format: ISO9660 level1 or 2 (except for extended formats), Joliet Compatible pixels: between 34 x 34 and 6144 x 4096 pixels Sub sampling 4:2:2 or 4:2:0 This unit is not compatible with MOTION JPEG. MP3, CD (JPEG) Common Items Maximum number of folders :99 Recognizable folders per disc on this unit (including the root folder) Maximum number of files :999 Recognizable per disc on this unit (total number for all the MP3, CD(JPEG) and other of files.) This unit is compatible with multi-session This unit is not compatible with packet writing.	
Television system		
TV system	NTSC system, 525 lines, 60 fields	
Antenna reception input	TV Channel: 2ch - 69ch CATV Channel: 1ch - 125ch	
RF converter output	Not provided	
Video system		
Recording system	MPEG2 (Hybrid VBR)	
Input	LINE (pin jack) x 2, 1.0 Vp-p; 75 ohm S connector x 2 Y: 1.0 Vp-p; 75 ohm C: 0.286 Vp-p; 75 ohm	
Output	LINE (pin jack) x 1, 1.0 Vp-p; 75 ohm S connector x 1 Y: 1.0 Vp-p; 75 ohm C: 0.286 Vp-p; 75 ohm	
Component video output (480i/480P)	Y: 1.0 Vp-p; 75 ohm Pb: 0.7 Vp-p; 75 ohm Pr: 0.7 Vp-p; 75 ohm	

<b>Audio system</b>	
Recording system	Dolby Digital (2ch)
Analog Input	LINE (pin jack) x 2 Reference input: 309 mVrms FS: 2 Vrms (1 kHz, 0 dB) Input impedance: 47 kohm
Analog Output	LINE (pin jack) x 1 Reference output: 309 mVrms FS: 2 Vrms (1 kHz, 0 dB) Output impedance: 1 kohm (Load impedance: 10 kohm)
Number of channels	Recording: 2 channels Playback: 2 channels
Other input/output connector	Digital audio optical output connector x 1 (PCM, Dolby Digital, DTS)
DV Input	IEEE 1394 Standard, 4pin
HDMI Output	19 pin typeA x 1 HDMI Ver. 1.2a (EDID Ver.1.3)
<b>SD System</b>	
SD Card Slot	SD memory card slot: 1pc
Still Picture (JPEG, TIFF)	
Compatible Media	SD memory card */Multi Media Card *Includes miniSD™ cards. (A miniSD™ card adapter needs to be inserted.)
Format	FAT12, FAT16
Image file format	JPEG conforming to DCF (Design rule for Camera File system) TIFF (Uncompressed RGB chunky) DPOF Compatible (sub sampling: 4:2:2 or 4:2:0)
Number of pixels	34 x 34 to 6144 x 4096
Thawing time	Approx. 3sec (6M pixels, JPEG)
<b>Others</b>	
Dimensions	Approx. 430 (W) x 58 (H) x 248 (D) mm [Approx. 16 15/16" (W) x 2 5/16" (H) x 9 13/16" (D)]
Mass	Approx. 2.8 kg (6.16lbs)
Operating temperature	5°C - 40°C (41°F - 104°F)
Operating humidity range	10 %-80 % RH (no condensation)
Clock unit	Quartz-controlled 12-hour digital display
LASER Specification (Class I LASER Product)	
Wave length	780 nm(CDs), 662 nm(DVDs)
Laser power	No hazardous radiation is emitted with the safety protection.
Solder	These models use lead free solder (PbF).

Notes : Mass and dimensions are approximate.  
Specifications are subject to change without notice.

## 5. Feature

### 5.1. HDAVI Control (HDMI Link)

Linked operations by HDAVI Control (HDMI Link)

#### 5.1.1. What is HDMI

HDMI is abbreviation of [High-Definition Multimedia Interface], and is digital interface standard for next generation TV corresponding to follows.



1. Non-compressing high quality digital image
2. Digital transmission of multi channel digital audio.
3. Two way communication of control signal of control straightening between equipments

Cable	Transmission method	Directionality	Transmission signal	Feature
HDMI Cable	Digital (~4.455Gbps)	One-way	Digital image (non-compression high-definition television image)	Clock line in one system and data line in three systems can high-speed communicate high reliability because of balance communication that uses three respectively every one system. Moreover, because
		One-way	Digital Audio (6ch/24 bit high sound quality PCM of DVD audio/ Bit stream of surround to 8ch of DVD video)	high-speed data line in three systems can be used at same time, it has ten of other digital cables times or more transmission ability. And can transmit high-definition television image of non-compression, 24 bit high sound quality PCM voice of multi-CH of DVD audio (to 6ch) and Bit stream signal of surround to 8ch of DVD video (5.1ch, 6.1ch, and 7.1ch, etc.) as a digital signal of no deterioration.
		Interactive	Digital control signal (Advanced control between equipments )	It has power supply line and a interactive control signal line communication independent of AV signal, and can an advanced control between equipments. Therefore it can correspond to making of AV equipment in the future highly a network

**Pin Name**

No	Pin Name
1	TMDS Data2(+)
2	TMDS Data2(shield)
3	TMDS Data1(-)
4	TMDS Data1(+)
5	TMDS Data1(shield)
6	TMDS Data2(-)
7	TMDS Data0(+)
8	TMDS Data0(shield)
9	TMDS Data0(-)
10	TMDS Clock(+)
11	TMDS Clock(shield)
12	TMDS Clock(-)
13	CEC (Linked operation control)
14	NC
15	SCL
16	SDA
17	Ground
18	+5v Power
19	Hot Plug Detect

Pin layout of plug of HDMI cable seen from outside.

1	3	5	7	9	11	13	15	17	19	
	2	4	6	8	10	12	14	16	18	Shell

### 5.1.2. Link functions with Equipments Corresponding Table

Functions
(1) Automatic Input switch
(2) Link of Power

In case setting of [FUNCTIONS] → [Setup] → [TV Screen] → [Functions of HDMI] → [Control with HDMI] are on, all above equipments Link functions are effective.

### 5.1.3. Outline of Equipments Linked functions

#### (1) Automatic Input switch

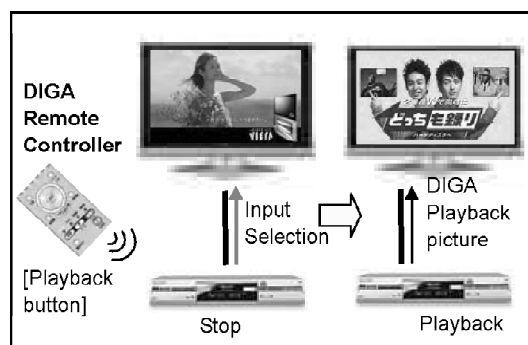
At starting of playback/ GUI display by DIGA, it turns on power of VIERA, and it displays picture of DIGA onto screen of VIERA.

Starting of playback:

It includes automatic playback of DVD-Video and so on. And it includes picture of screen saver too.

GUI display:

FUNCTIONS, DIRECT NAVIGATOR, TV PROGRAM, PROG/CHECK, Timer Recording, G-code, Initial setting, Playback setting, Play list, SD/DVD guide, Warning messages that user can select and so on.



## (2) Power Link

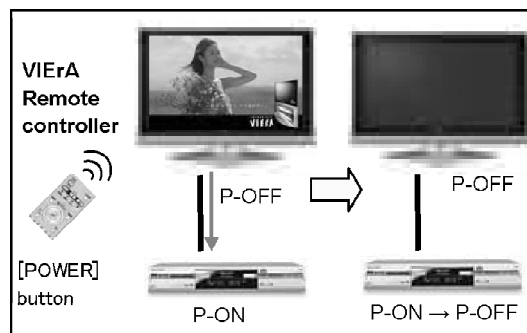
Power of DIGA is turned off linking to POWER OFF of VIErA.

- Power of DIGA is not turned on linking to POWER ON of VIErA.
- It is limited in following cases that DIGA links to POWER OFF of VIErA.

1. During EE display (While Timer recording is being executed/ Functions is being displayed are included.)
2. Case that DIGA is playing back (only North America/ Japan)

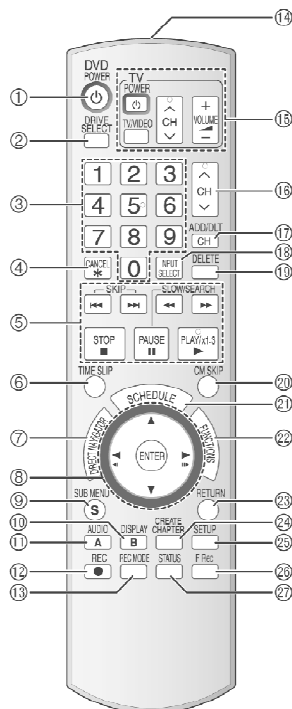
However except cases below.

- During EE display, but manual recording is being executing/ during EXT\_Link recording.
- During Tray is being opened.
- Case that DIGA is in status that power cannot turn off (during dubbing, during finalize).



## 6. Location of Controls and Components

## Remote control

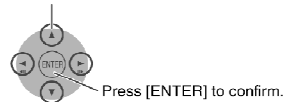


- ① Turn the unit on
- ② Select the drive (DVD or SD)
- ③ Select channels and title numbers, etc./ Enter numbers
- ④ Cancel
- ⑤ Basic operations for recording and play
- ⑥ Skip the specified time
- ⑦ Show Direct Navigator/Top menu
- ⑧ Selection/Enter, Frame-by-frame
- ⑨ Show sub menu
- ⑩ Show on-screen menu
- ⑪ Select audio
- ⑫ Start recording/Specify the time to stop recording
- ⑬ Change recording mode
- ⑭ Transmission window
- ⑮ Television operations
- ⑯ Channel select
- ⑰ Add/delete channel
- ⑱ Input select (IN1 or IN2 or DV)
- ⑲ Delete items
- ⑳ Skip a minute forward
- ㉑ Show scheduled recording list
- ㉒ Show FUNCTIONS window
- ㉓ Return to previous screen
- ㉔ Create chapters
- ㉕ Show Setup menu
- ㉖ Start Floxible Recording
- ㉗ Show status messages

### ■ Using the cursor

- Select items on menu screens and set items.

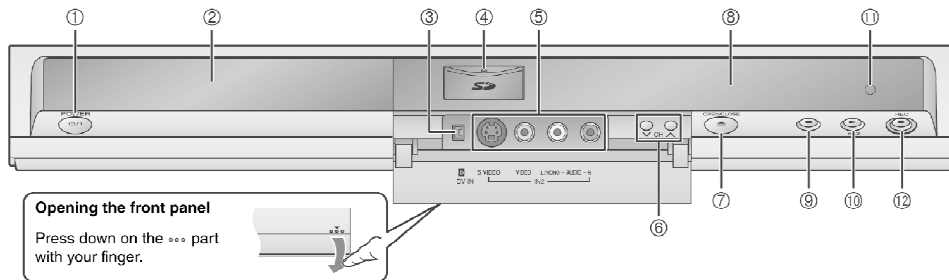
Press up, down, left or right to select an item.



This operation is also possible...

- Frame-be-frame (backward/forward): Press [◀▶] or [▶▶] (left/right)

## Main unit

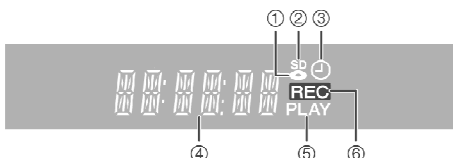


### Opening the front panel

Press down on the ... part with your finger.

- ① POWER button (POWER )  
Press to switch the unit from on to standby mode or vice versa. In standby mode, the unit is still consuming a small amount of power.
- ② Disc tray
- ③ Connector for digital video (DV) camcorder
- ④ SD card slot
- ⑤ Connector for external equipment
- ⑥ Channel select
- ⑦ Open/close disc tray
- ⑧ Display
- ⑨ Stop
- ⑩ Start play
- ⑪ Remote control signal sensor
- ⑫ Start recording/  
Specify the time to stop recording

## The unit's display



- ① Disc indicator
  - This indicator lights up when a disc that is supported by this unit is inserted.
- ② SD card indicator
  - This indicator lights up when card is inserted.
- ③ Scheduled recording indicator
- ④ Main display section
- ⑤ Playing indicator
- ⑥ Recording indicator

# 7. Operation Instructions

## 7.1. Taking out the Disc from DVD-Drive Unit when the Disc cannot be ejected by OPEN/CLOSE button

### 7.1.1. Forcible Disc Eject

7.1.1.1. When the power can be turned off.

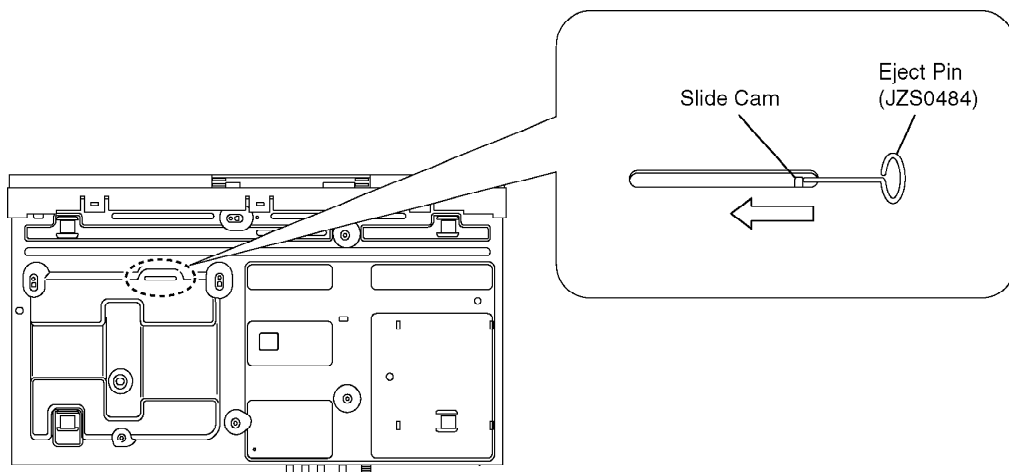
1. Turn off the power and press [STOP] [CH UP] keys on the front panel simultaneously for 5 seconds.

7.1.1.2. When the power can not be turned off.

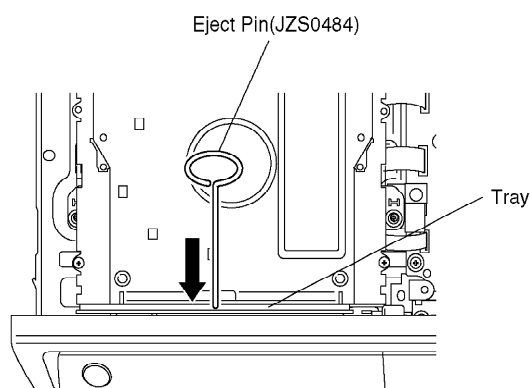
1. Press [POWER] key on the front panel for over 10 seconds to turn off the power forcibly, and press [STOP] [CH UP] keys on the front panel simultaneously for 5 seconds.

### 7.1.2. When the Forcible Disc Eject can not be done.

1. Turn off the power and pull out AC cord.
2. Remove the Top Case.
3. Put deck so that bottom can be seen.
4. Slide SLIDE CAM by Eject Pin (JZJ0484) or minus screw driver (small) in the direction of arrow to eject tray slightly.



5. Put deck upward, and push out Tray by Eject Pin (JZS0484) or minus screw driver (small).



## 8. Service Mode

### 8.1. Self-Diagnosis and Special Mode Setting

#### 8.1.1. Self-Diagnosis Functions

Self-Diagnosis Function provides information for errors to service personnel by “Self-Diagnosis Display” when any error has occurred.

U\*\*, H\*\* and F\*\* are stored in memory and held.

You can check latest error code by transmitting [0] [1] of Remote Controller in Service Mode.

Automatic Display on FL will be cancelled when the power is turned off or AC input is turned off during self-diagnosis display is ON.

Error Code	Diagnosis contents	Description	Monitor Display	Automatic F
U30	Remote control code error	Display appears when main unit and remote controller codes are not matched.	No display	<div>SET *</div> <p>“*” is remote c code of the ma Display for 5 s</p>
U59	Abnormal inner temperature detected	<p>Display appears when the drive temperature exceeds 70°C.</p> <p>The power is turned off forcibly.</p> <p>For 30 minutes after this, all key entries are disabled. (Fan motor operates at the highest speed for the first 5 minutes. For the remaining 25 minutes, fan motor is also stopped.) The event is saved in memory as well.</p>	No display	<div>U59</div> <p>“U59 is display minutes.</p>
U61	<p>The unit is carrying out its recovery process.</p> <p>(with no disc in the disc tray)</p>	<p>The unit detected an error while recording or playing with no disc in the disc tray. The unit is carrying out its recovery process. This process restores the unit to normal operation. The unit is not broken. Wait until the message disappears.</p>	No display	<div>U61</div>

Error Code	Diagnosis contents	Description	Monitor Display	Automatic F
U88	The unit is carrying out its recovery process. (with a disc in the disc tray)	• The unit detected an error while recording or playing with a disc in the disc tray. The unit is carrying out its recovery process. This process restores the unit to normal operation. The unit is not broken. Wait until the message disappears.	No display	U88
U99	Hang-up	Displayed when communication error has occurred between Main microprocessor and Timer microprocessor.	No display	U99  Displayed is le [POWER] key i
F00	No error information	Initial setting for error code in memory (Error code Initialization is possible with error code initialization and main unit initialization.)	No display	No display
F34	Initialization error when main microprocessor is started up for program recording	When initialization error is detected after starting up main microprocessor for program recording, the power is turned off automatically. The event is saved in memory.	No display	No display
F58	Drive hardware error	When drive unit error is detected, the event is saved in memory.	No display	No display
UNSUPPORTED error	Unsupported disc error	*An unsupported format disc was played, although the drive starts normally. *The data format is not supported, although the media type is supported. *Exceptionally in case of the disc is dirty.	"This disc is incompatible."	UNSUP ↓ PORT  Display for 5 s
NO READ	Disc read error	*A disc is flawed or dirty. *A poor quality failed to start. *The track information could not be read.	"Cannot read. Please check the disc."	NOREAD
HARD ERR	Drive error	The drive detected a hard error.	"DVD drive error."	Display for 5 s HARD ↓ ERR
IR ERR	IR communication error	[IR ERR] is displayed when communication between Timer microprocessor and IR microprocessor fails.	No display	IR ERR

Error Code	Diagnosis contents	Description	Monitor Display	Automatic F
No REC	Recording is impossible	[No REC] is displayed when recording is impossible due to the defect, dirt or wound of media.	No display	No REC
SELF CHECK	Restoration operation	Since the power cord fell out during a power failure or operation, it is under restoration operation. *It will OK, if a display disappears automatically. If a display does not disappear, there is the possibility that defective Digital P.C.B. / RAM drive.	No display	SELF ↓ CHECK
PLEASE WAIT	Unit is in termination process	Unit is in termination process now. “BYE” is displayed and power will be turned off. In case “Quick Start” of setup menu is ON, it is displayed in restoration operation for AC off.	No display	PLEASE ↓ WAIT
UNFORMATTED	Unformatted disc error	You have inserted an unformatted DVD-RAM or DVD-RW that is unformatted or recorded on other equipment.	Format This disc is not formatted properly. Format the disc in DISK MANAGEMENT?	UNFOR ↓ MAT

### 8.1.2. Special Modes Setting



Item		FL display	Key oper:
Mode name	Description		Front K
TEST Mode	*All the main unit's parameters (include tuner) are initialized.	TM L1	Press [STOP], [F] and [OPEN/CLOSE] simultaneously for 3 seconds when power is on.
Rating password	The audiovisual level setting password is initialized to "Level 8".	INIT	Open the tray, and press [REC] and [PLAY] simultaneously for 3 seconds.
Service Mode	Setting every kind of modes for servicing. *Details are described in "8.1.3. Service Mode at a glance".	SERV	When the power is on, press [CH UP], [CH DOWN], [CLOSE] and [RECALL] simultaneously for 3 seconds.
Forced disc eject	Removing a disc that cannot be ejected. The tray will open and unit will shift to P-off mode. *When Timer REC is ON or EXT-LINK is ON, execute " Forced disc eject " after releasing Timer REC or EXT-LINK. *This command is not effective during "Child lock" is ON. While Demonstration Lock is being set, this Forced disc eject function is not accepted. <div>If this command was executed while TIMER REC is being set, TIMER REC setting will turn to OFF.</div>	The display before execution leaves. *****	When the power is on, press [STOP] for 3 seconds.
Forced power-off	When the power button is not effective while power is ON, turn off the power forcibly. *When Timer REC is ON or EXT-LINK is ON, execute "Forced Power-off" after releasing Timer REC or EXT-LINK.	Display in P-off mode.	Press [POWER] for more than 10 seconds.

Item		FL display	Key oper:
Mode name	Description		Front K
Aging	<p>Perform sequence of modes as * Aging Description shown below continually.</p> <div><p>Caution: All programs in DVD-RAM disc will be deleted because Formatting is done once in Aging process.</p></div>	Display following the then mode.	<p>When the power press [STOP], [F] and [OPEN/CLO simultaneously seconds and les seconds.</p> <p>NOTE1:</p> <p>If Unit has not t Aging mode by operations show execute TEST M and re-execute ( shown above. (*All the main u parameters incl are initialized by mode.)</p> <p>NOTE2:</p> <p>If the unit has h because of pres for over 10 secc turn off the pow execute this cor *When releasing mode, press [PC key.</p>

Aging Contents (Example):

Format→REC→STOP→PLAY→CUE→REV→PLAY→PAUSE | \*  
-↑-  
|CLOSE←OPEN←STOP←PLAY←R-SLOW←SLOW←|

\*XP mode . . . . . repeat twice  
SP mode . . . . . repeat 4 times  
LP mode . . . . . repeat 8 times  
EP mode . . . . . repeat 12 times

Item		FL display	Key oper:
Mode name	Description		Front K
Demonstration lock/unlock	Ejection of the disc is prohibited. The lock setting is effective until unlocking the tray and not released by “Main unit initialization” of service mode.	*When lock the tray. <div>LOCK</div> “LOCK” is displayed for 3 seconds.	When the power is on (standby mode), press [STOP] and [POWER] keys simultaneously for 3 seconds.  Note: When a disc is in the tray, this setting is not effective.
		*When unlock the tray. <div>UNLOCK</div> “UNLOCK” is displayed for 3 seconds.	When the power is on (standby mode), press [STOP] and [POWER] keys simultaneously for 3 seconds.
		*When press OPEN/CLOSE key while the tray is being locked. <div>LOCK</div> Display “LOCK” for 3 seconds.	Press [OPEN/CLOSE] key while the tray is being locked.
ATP Initialization	ATP setting is initialized, and the unit turns off automatically.	It is same with display in stop mode. <div>*****</div>	When the power is on (standby mode), press [STOP] and [CH DOWN] keys simultaneously for 3 seconds.
Progressive initialization	The progressive setting is initialized to Interlace.	The display before execution leaves. <div>*****</div>	When the power is on (standby mode), press [STOP] and [PLAY] keys simultaneously for 3 seconds.

### 8.1.3. Service Modes at a glance

Service mode setting: While the power is off, press [REC], [CH UP] and [OPEN / CLOSE] simultaneously for five seconds.

Item		FL display	Key oper:
Mode name	Description		(Remote contr
Release Items	Item of Service Mode executing is cancelled.	SERV	Press [0] [0] or   service mode.
Error Code Display	Last Error Code of U/H/F held by Timer is displayed on FL. *Details are described in “8.1.1. Self-Diagnosis Functions”.	<div>♣ □ □</div> <p>* ♣ shows U/H/F. □ □ shows number.</p> <p>If any error history dose not exist, [F00] is displayed.</p>	Press [0] [1] in s mode
ROM Version Display	1. Region code (displayed for 5 sec.) 2. Main firm version (displayed for 5 sec.) 3. Timer firm version (displayed for 5 sec.) 4. Drive firm version (displayed for 5 sec.) 5. ROM correction version (left displayed)	1. NO * 2. ***** 3. ***** 4. ***** 5. ***** <p>“□ □” are version displays.</p>	Press [0] [2] in s mode
White Picture Output	White picture is output as component Output from AV Decoder. *White picture (Saturation rate : 100%) *It is enable to switch Interlace/ Progressive by “I/P switch: [1] [4]”	*Initial mode is “Interlace”. <div>WHIT I</div>	Press [1] [1] in s mode.
		Switch Interlace/ Progressive <div>WHIT</div>	Press [1] [4] in V Picture Output r *I/P are switche alternately.

Item		FL display	Key oper:
Mode name	Description		(Remote contr
Magenta Picture Output	Magenta picture is output with Component Output from AV Decoder. *Magenta picture (Saturation rate: 100%) *It is enable to switch Interlace/Progressive by "I/P switch: [1] [4]"	*Initial mode is "Interlace". <div>MAGE I</div>	Press [1] [2] in s mode.
		Switch Interlace/Progressive <div>MAGE</div>	Press [1] [4] in M Picture Output r *I/P are switcher alternately.
RTSC Return in XP (A & V)	L1 input signal is encoded (XP), decoded (XP) and output decoded signal to external without DISC recording and DISC playback.	Initial mode: EE2/ Interlace / XP/ Audio 48kHz <div>EE2</div>	Press [1] [3] in s mode.
		Switch Interlace/Progressive <div>EE2P48</div>	Press [1] [4] in F Return XP mode *I/P are switcher alternately.
		Audio 44.1 kHz/ 48 kHz Switch <div>EE2P44</div>	Press [2] [4] in F Return XP mode *48 kHz / 44.1 kHz switched alternately.
I/P Switch	Switch Interlace and Progressive in EE mode. *Initial setting is "Interlace". *This command is effective during executing "White Picture Output", "Magenta Picture Output" and "RTSC Return in XP (A & V)" modes.	Initial mode is Interlace <div>SERV P</div> Switch Interlace/Progressive <div>SERV I</div>	Press [1] [4] in I mode. *I/P are switcher alternately.
Audio Mute (XTMUTE)	Check whether mute is applied normally by the timer microprocessor.	<div>T MUTE</div>	Press [2] [1] in s mode.
Audio Mute (XDMUTE)	Check whether mute is applied normally by the Digital P.C.B..	<div>D MUTE</div>	Press [2] [2] in s mode.

Item		FL display	Key oper:
Mode name	Description		(Remote contr
Audio Pattern Output	The audio pattern stored in the internal memory is output (Lch: 1kHz/-18dB) (Rch: 400Hz/-18dB) *Audio sound clock switching operation of DAC can be confirmed by sub command [2] [4].	Initial mode (Audio 48kHz) <div>AU 48</div>	Press [2] [3] in s mode.
		Audio 44.1kHz/48kHz switching <div>AU 44</div>	Press [2] [4] in / Pattern Output i *48 kHz / 44.1 kHz switched altern
Laser Used Time Indiction	Check laser used time (hours) of drive.	<div>*****</div> ● (*****) is the used time display in hour. ● Laser used time of DVD / CD in Playback/ Recording mode is counted.	Press [4] [1] in s mode.
Delete the Laser Used Time	Laser used time stored in the memory of the unit is deleted.	<div>CLR</div>	Press [9] [5] in s mode.

Item		FL display	Key oper:
Mode name	Description		(Remote contr
RAM Drive Last Error	RAM Drive error code display. *For details about the drive error code, refer to the Service Manual for the specific RAM Drive.	<p>1. Error Number is displayed for 5 seconds.</p> <div>NO **</div> <p>2. Time when the error has occurred is displayed for 5 seconds.</p> <div>DDhhmm</div> <p>DD: Day hh: Hour mm: Minute</p> <p>3. Last Drive Error (1/2) is displayed for 5 seconds.</p> <div>*****</div> <p>4. Last Drive Error (2/2) is displayed for 5 seconds.</p> <div>*****</div> <p>5. Error occurring Disc type is displayed for 5 seconds.</p> <div>*****</div> <p>6. Disc Maker ID is displayed for 5 seconds.</p> <div>*****</div> <p>7. Factor of Drive Error occurring is left displayed</p> <div>*****</div>	<p>Press [4] [2] in s mode.</p> <p>When “INFO**** being displayed error histories c displayed by pr [1] - [1] [9]</p> <p>In case that the cannot be identi display is black</p>

Item		FL display	Key operation															
Mode name	Description		(Remote control)															
Delete the Last Drive Error	Delete the Last Drive Error information stored on the DVD RAM-Drive.	<div>CLR</div>	Press [9] [6] in setup mode.															
Laser power confirmation	Drive state is judged based on difference between laser power value at shipping and present laser power value.	<div>CHK *</div> <p>* is judgment result</p> <table><tr><th>*</th><th>Power value difference</th><th>Evaluation</th></tr><tr><td>0</td><td>1mW or less</td><td>Very good.</td></tr><tr><td>1</td><td>2mW or less</td><td>Good.</td></tr><tr><td>2</td><td>3mW or less</td><td>Bad.</td></tr><tr><td>3</td><td>4mW or more</td><td>Very bad.</td></tr></table> <p>If DVD-RAM disc is not inserted, [NO DISC] is displayed. If power value study was failed, [ERROR] is displayed.</p>	*	Power value difference	Evaluation	0	1mW or less	Very good.	1	2mW or less	Good.	2	3mW or less	Bad.	3	4mW or more	Very bad.	1. Insert DVD-RAM into RAM Drive in series (Other media are assumed correspondence.) 2. Press [4] [4].
*	Power value difference	Evaluation																
0	1mW or less	Very good.																
1	2mW or less	Good.																
2	3mW or less	Bad.																
3	4mW or more	Very bad.																
Turn on all FL/LEDs	All segments of FL and all LEDs are turned on.	All segments are turned on.	Press [5] [1] in setup mode.															
S1 signal output	Forcibly superimpose the S1 signal (approx. 4.5V DC) on the EE chroma signal, and check the output on the S terminal.	<div>S1 OUT</div>	Press [5] [2] in setup mode.															
S2 signal output	Forcibly superimpose the S2 signal (approx. 2V DC) on the EE chroma signal, and check the output on the S terminal.	<div>S2 OUT</div>	Press [5] [3] in setup mode.															
Front connection inspection	Press all front keys and check the connection between Main P.C.B. and Front key Switches.	<div><div>01</div><div>02</div><div>03</div><div>04</div><div>05</div><div>06</div><div>07</div><div>08</div><div>09</div><div>10</div><div>11</div><div>12</div><div>13</div><div>14</div><div>15</div><div>16</div><div>17</div><div>18</div><div>19</div><div>20</div><div>21</div><div>22</div><div>23</div><div>24</div><div>25</div><div>26</div><div>27</div><div>28</div><div>29</div><div>30</div><div>31</div><div>32</div><div>33</div><div>34</div><div>35</div><div>36</div><div>37</div><div>38</div><div>39</div><div>40</div><div>41</div><div>42</div><div>43</div><div>44</div><div>45</div><div>46</div><div>47</div><div>48</div><div>49</div><div>50</div><div>51</div><div>52</div><div>53</div><div>54</div><div>55</div><div>56</div><div>57</div><div>58</div><div>59</div><div>60</div><div>61</div><div>62</div><div>63</div><div>64</div><div>65</div><div>66</div><div>67</div><div>68</div><div>69</div><div>70</div><div>71</div><div>72</div><div>73</div><div>74</div><div>75</div><div>76</div><div>77</div><div>78</div><div>79</div><div>80</div><div>81</div><div>82</div><div>83</div><div>84</div><div>85</div><div>86</div><div>87</div><div>88</div><div>89</div><div>90</div><div>91</div><div>92</div><div>93</div><div>94</div><div>95</div><div>96</div><div>97</div><div>98</div><div>99</div><div>100</div></div> <p>(1) Each time a key is pressed, segment turned on increases one by one. (2) Total number of keys that have been pressed.</p>	Press [5] [4] in setup mode.															
Production Date Display	Display the date when the unit was produced.	<div>YYMMDD</div> <p>YY: Year MM: Month DD: Day</p>	Press [6] [1] in setup mode.															



Item		FL display	Key oper:
Mode name	Description		(Remote contr
Display the accumulated working time	Display the accumulated unit's working time.	<div>*****</div> (Indicating unit: Second)	Press [6] [4] in s mode.
Display the Error History	Display the Error History stored on the unit.	Display reason of error for 5 seconds. <div>NO **</div> 01: Defect of Digital P.C.B. (AV DEC / MAIN CPU) 02: Defect of RAM Drive. 03: Defect of Disc. 04: Defect of Digital P.C.B. or Communication Error. 05: Defect of Digital P.C.B. (AV DEC / MAIN CPU)  Display the time when the error has occurred for 5 seconds. <div>DDhhmm</div> DD: Day hh: Hour mm: Minute Accumulated working time till occuring of the error is left displayed. <div>*****</div> (Indicating unit: Second)	Press [6] [5] in s mode.  Then press [0] [ the past 19 erro are displayed.
Delete the Error History	Delete Error History information stored on the unit.	<div>CLR</div>	Press [9] [7] in s mode.

Item		FL display	Key oper:
Mode name	Description		(Remote contr
SD card WRITE check	Delete Error History information stored on the unit.	<p>When the WRITE check is OK.</p> <div>SD OK</div> <p>When the WRITE check is NG.</p> <div>SD NG</div> <p><b>*Note:</b></p> <p>The image stored in the SD card will be erased.</p>	<p>Insert a SD card card slot, and p in service mode</p> <p>*Insert SD card power is off.</p> <p>*Check for [CAF display on the F and go on the p</p>
Tray OPEN/ CLOSE Test	The RAM drive tray is opened and closed repeatedly.	<div>*****</div> <p>“*” is number of open/ close cycle times.</p>	<p>Press [9] [1] in s mode</p> <p>*When releasing mode, press the button of Remo Controller more seconds.</p>
Error code initialization	Initialization of the last error code held by timer (Write in F00)	<div>CLR</div>	Press [9] [8] in s mode.
Initialize Service	Last Drive Error, Error history and Error Codes stored on the unit are initialized to factory setting.	<div>CLR</div>	Press [9] [9] in s mode.
Finishing service mode	Release Service Mode.	<p>Display in STOP (E-E) mode.</p> <div>*****</div>	Press power bu the front panel c controller in ser

## 9. Service Fixture & Tools

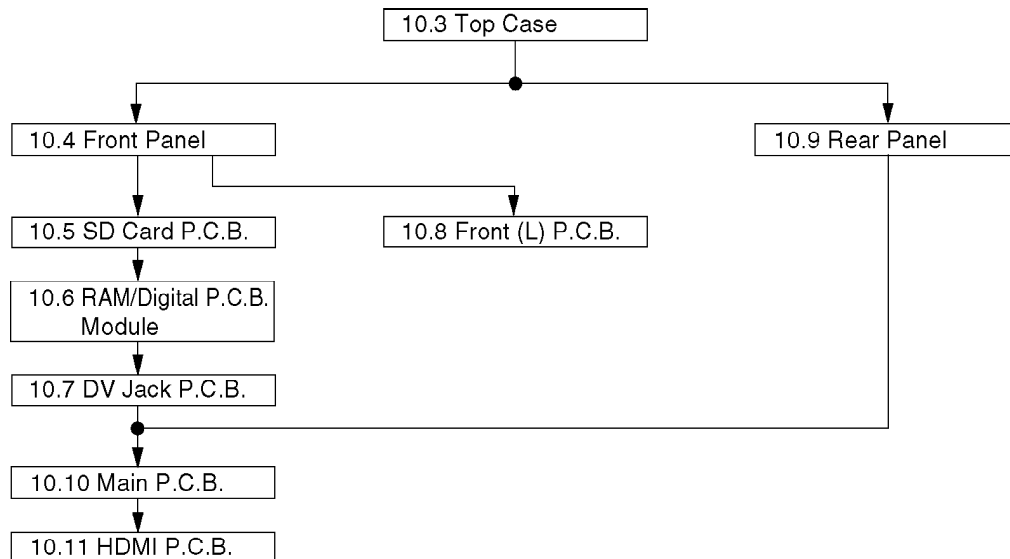
Part Number	Description	Compatibilit
RFKZ0365	Extension Cable (MainP.C.B. - Digital P.C.B. / 64 Pin)	New
JZS0484	Eject Pin	Same as E50 Series
RFKZ03D01K	Lead Free Solder (0.3mm/100g Reel)	New
RFKZ06D01K	Lead Free Solder (0.6mm/100g Reel)	New
RFKZ10D01	Lead Free Solder (1.0mm/100g Reel))	New
RFKZ0316	Solder Remover (Lead free 10W temperature Solder/180g)	New
RFKZ0328	Flux	New
RFKZ0329	Bottle of Flux	New

## 10. Disassembly and Assembly Instructions

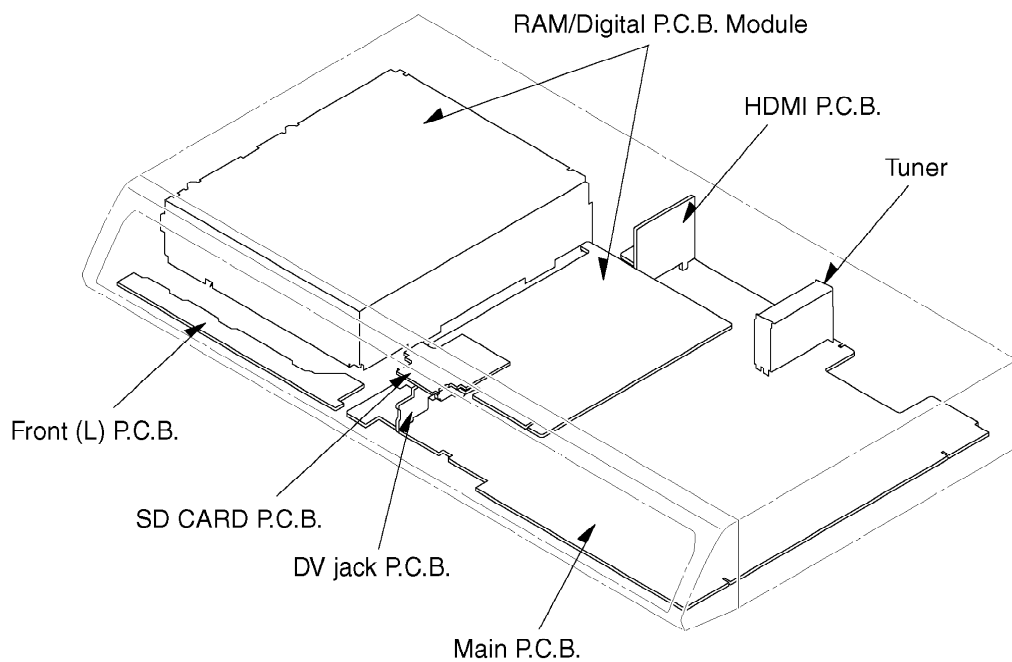
### 10.1. Disassembly Flow Chart

The following chart is the procedure for disassembling the casing and inside parts for internal inspection when carrying out the servicing.

To assemble the unit, reverse the steps shown in the chart below.

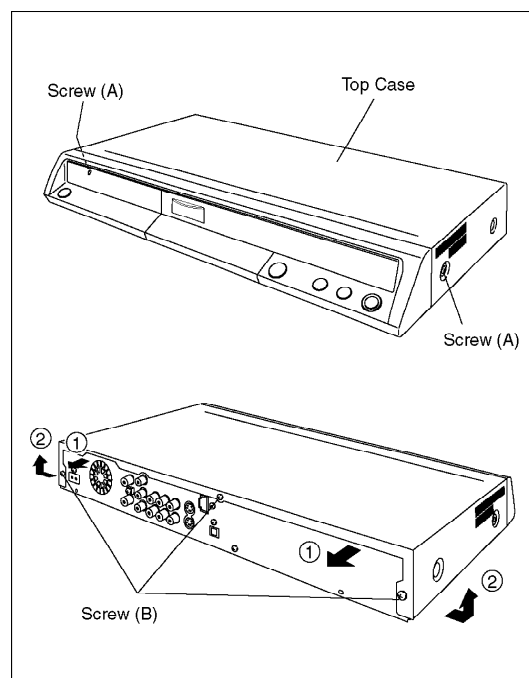


### 10.2. P.C.B. Positions



### 10.3. Top Case

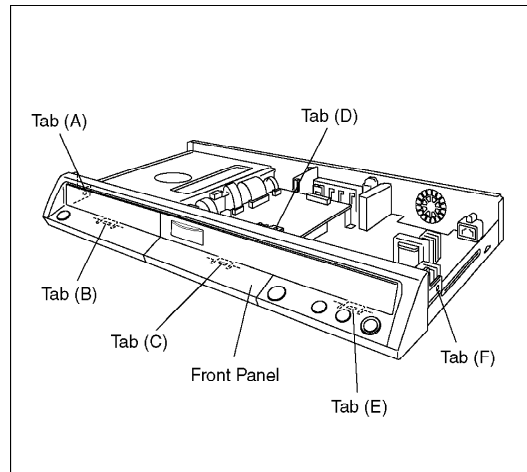
1. Remove the 2 screws (A) and 3 Screws (B).
2. Slide Top Case rearward and open the both ends at rear side of the Top Case a little and lift the Top Case in the direction of the arrows.



### 10.4. Front Panel

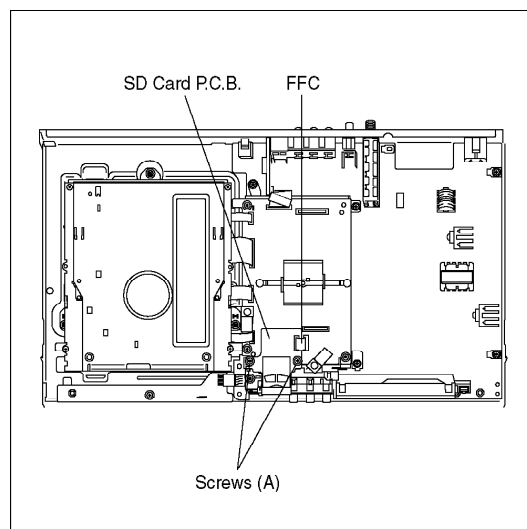
1. Unlock 6 tabs in (A) - (F) turn.

**Pull with the front panel in the direction of your side.**



### 10.5. SD Card P.C.B.

**1. Remove 1 FFC and 2 Screws (A) to remove SD Card P.C.B..**



### 10.6. RAM/Digital P.C.B. Module

**Caution:**

Pairing of RAM Drive and Digital P.C.B. as "RAM/Digital P.C.B. Module" have to be replaced together. If the pairing is changed, RAM Drive unit has to be re-aligned. Because the alignment data for RAM Drive Unit is stored in Digital P.C.B..

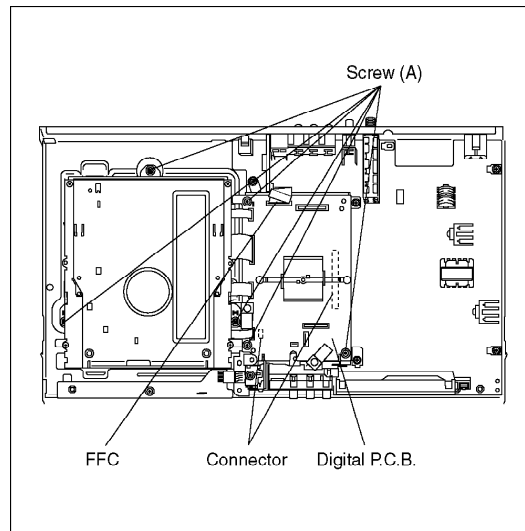
**Note:**

After replacing RAM/Digital P.C.B. Module, "TM L1" is displayed on FL. Once power off, and start-up again.

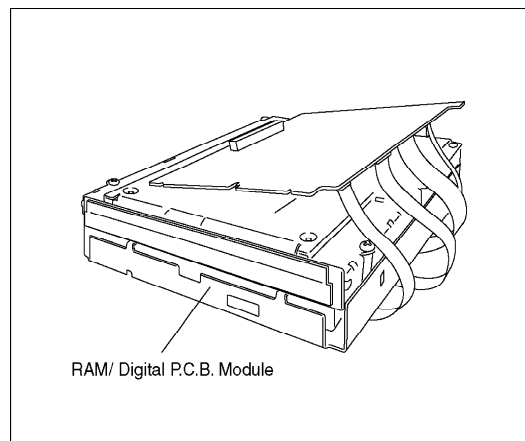
**1. Remove 1 FFC and 6 Screws (A).**

**2. Lift up Digital P.C.B. slightly so to disconnect Connectors to**

**remove Digital P.C.B.**



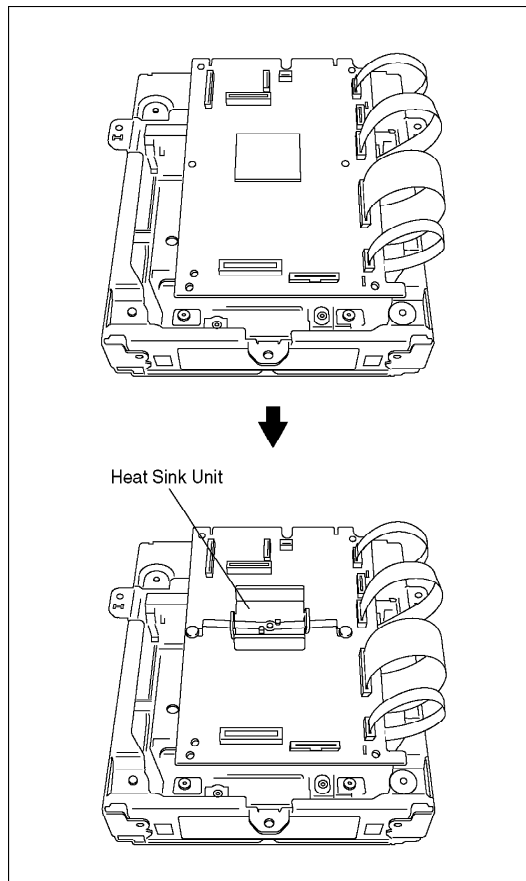
**3. Put Digital P.C.B. on RAM Drive and remove RAM/Digital P.C.B. Module.**



**Note:**

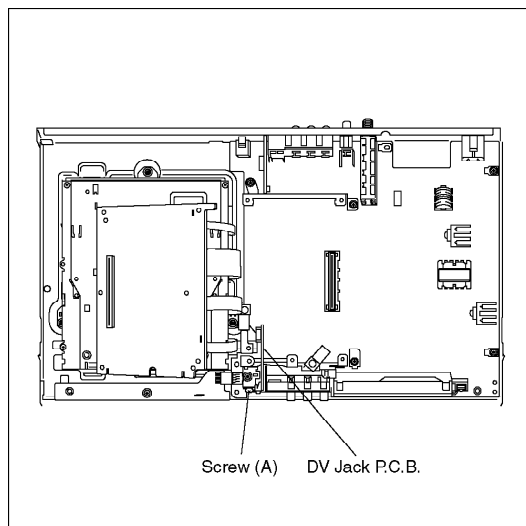
**RAM/Digital P.C.B. Module as service part has no heat sink unit.**

**Before returning to customer, heat sink unit should be installed on Digital P.C.B..**



## 10.7. DV Jack P.C.B.

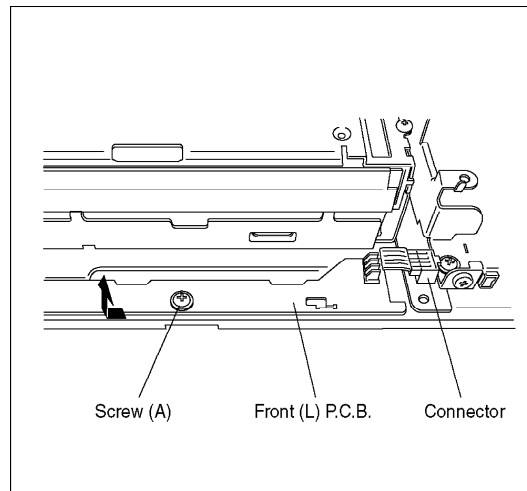
1. Remove 1 Screw (A) to remove DV Jack P.C.B.



## 10.8. Front (L) P.C.B.

1. Remove 1 Screw (A) and connector.

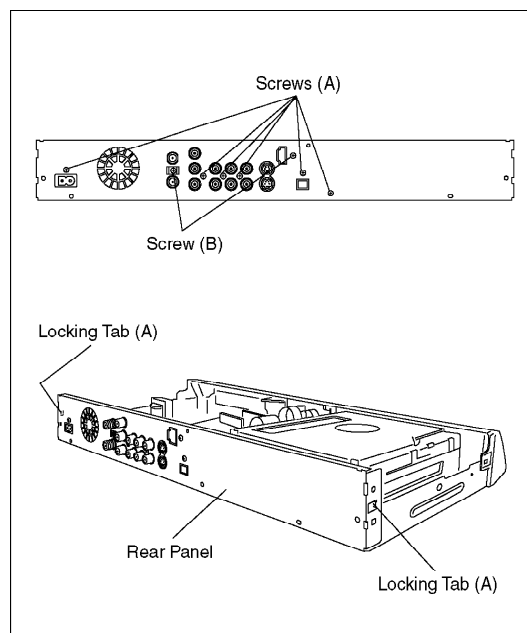
**2. Front (L) P.C.B. is removed in the direction of the arrow.**



### **10.9. Rear Panel**

**1. Remove 6 Screws (A) and 2 Screw (B).**

**2. Unlock 2 Locking Tabs (A) to remove Rear Panel.**



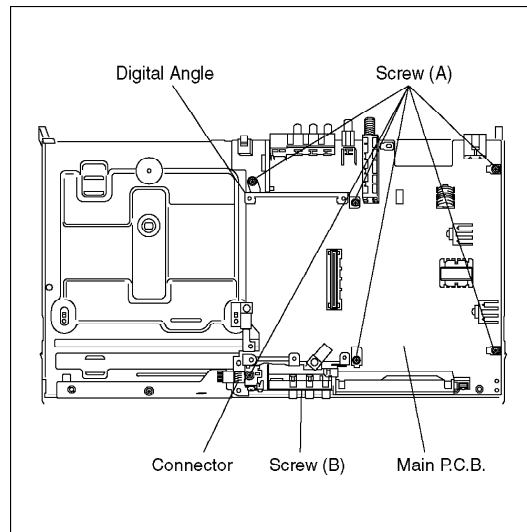
### **10.10. Main P.C.B.**

**1. Disconnect Connector for Front (L) P.C.B.**

**2. Remove 6 Screws (A) and 1 Screw (B).**

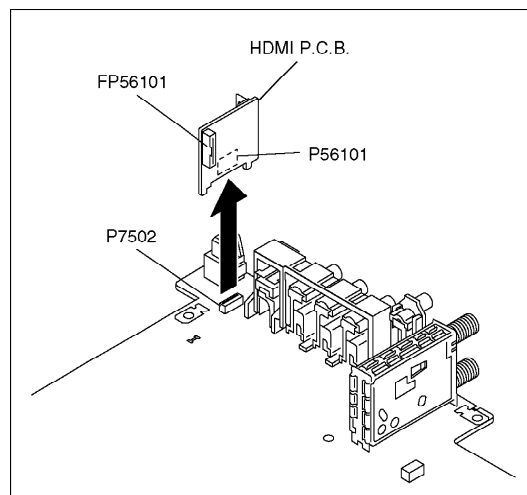
**3. Remove Digital Angle to remove Main P.C.B.**





## 10.11. HDMI P.C.B.

1. Pull out the HDMI P.C.B. in the direction of the arrow.



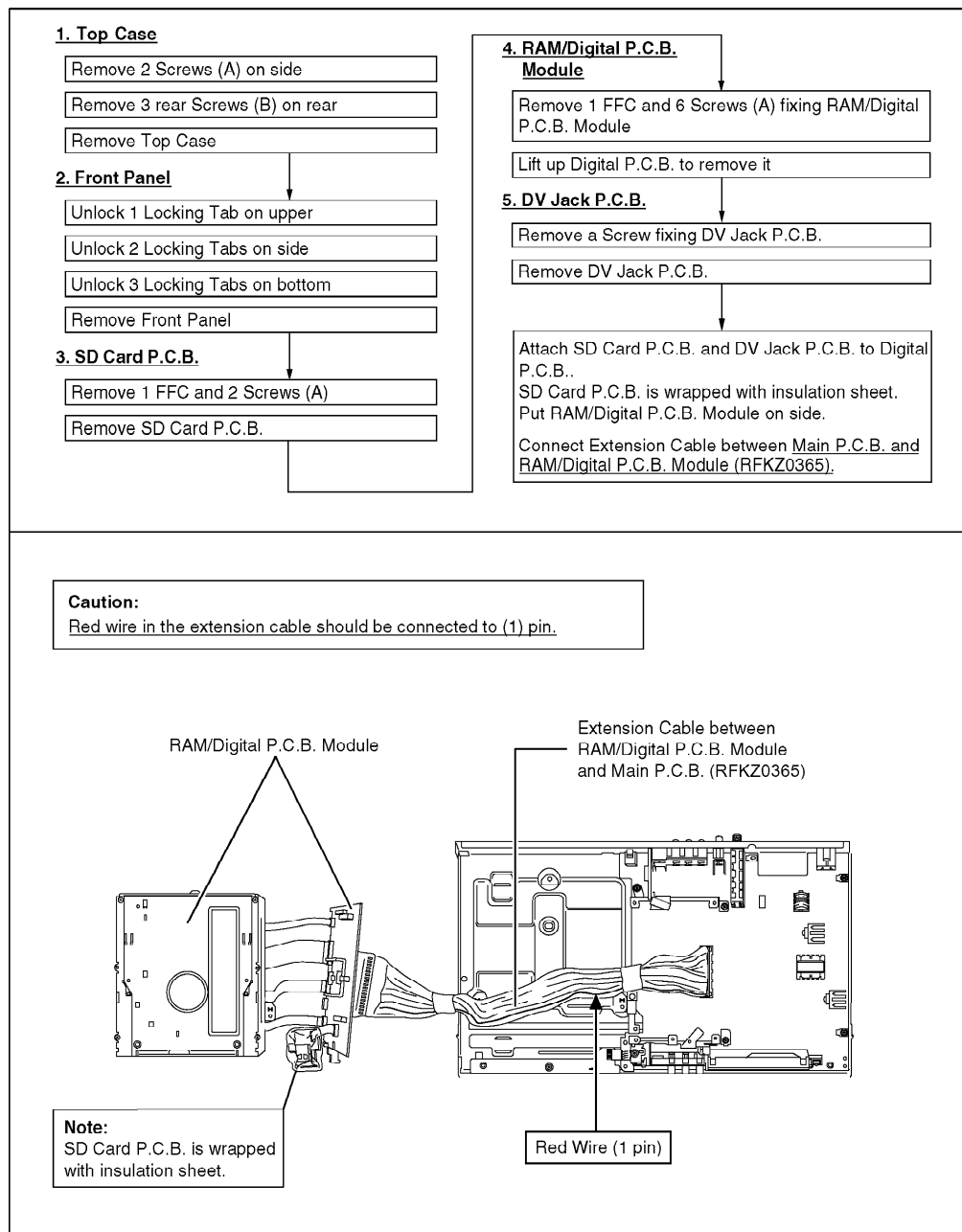
# 11. Measurements and Adjustments

## 11.1. Service Positions

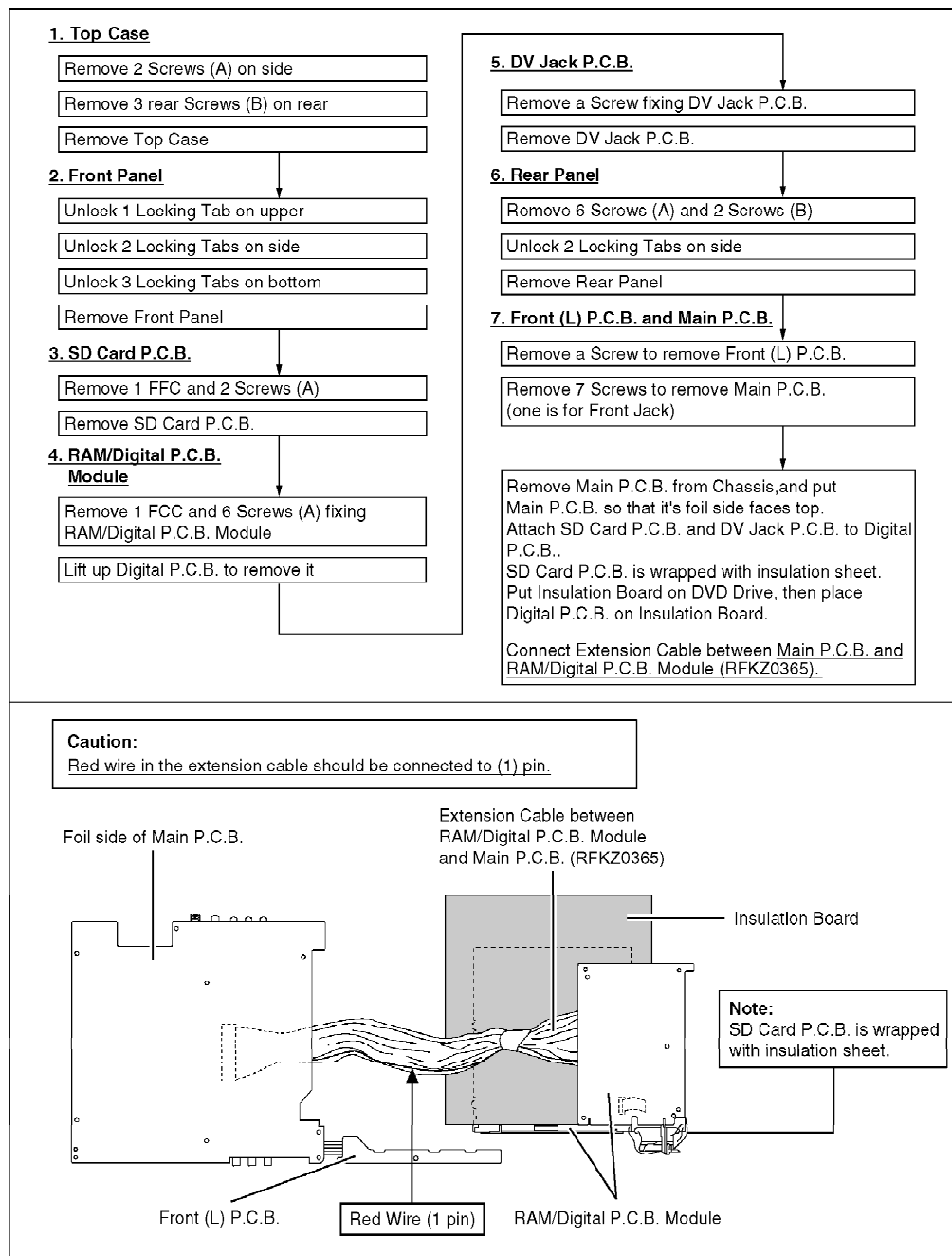
**Note:**

For description of the disassembling procedure, see the section 10.

### 11.1.1. Checking and Repairing of RAM / Digital P.C.B. Module



## 11.1.2. Checking and Repairing of Main P.C.B.



## 11.2. Notice after replacing RAM/Digital P.C.B. Module

[TM L1] is displayed after replacing RAM/Digital P.C.B. Module.

Once power off, and start up again.

## 11.3. When the unit does not operate normally after replacing the Timer Microprocessor or Main P.C.B.

When the unit does not operate normally after replacing the Timer Microprocessor or Main P.C.B. with new one, reset Timer Microprocessor.

Step	Operation	Descriptions
1	While power is ON, short TL7507 (RESET) and the TL7506 (GND) momentarily.	“RESET (L)” is transmitted to the of Timer Microprocessor (IC750 then the unit operates normally.

## 11.4. Standard Inspection Specifications after Making Repairs

After making repairs, we recommend performing the following inspection, to check normal operation.

No.	Procedure	Item to Check
1	Turn on the power, and confirm items pointed out.	Items pointed out should reappear.
2	Insert RAM disc.	The Panasonic RAM disc should be reco
3	Enter the EE (TU IN / AV IN - AV OUT) mode.	No abnormality should be seen in the pic sound or operation.
4	Perform auto recording and playback for one minute using the RAM disc.	No abnormality should be seen in the pic sound or operation. *Panasonic DVD-RAM disc should be use recording and playback.
5	If a problem is caused by a VCD, DVD-R, DVD-Video, Audio-CD, or MP3, playback the test disc.	No abnormality should be seen in the pic sound or operation.
6	Modules with SD Card Slot or DV Input Jack: In case of that the trouble is caused by SD card or DV terminal.	Make sure that [FIRM_SUCCESS] appear: FL displays. *[UNSUPPORT] display means the unit is updated to newest same version. Then ve up is not necessary.
7	After checking and making repairs, upgrade the firmware to the latest version.	Make sure that [FIRM_SUCCESS] appear: FL displays. *[UNSUPPORT] display means the unit is updated to newest same version. Then ve up is not necessary.
8	Transfer [9][9] in the service mode setting, and initialize the service settings (return various settings and error information to their default values. The laser time is not included in this initialization).	Make sure that [CLR] appears in the FL d After checking it, turn the power off.

Use the following checklist to establish the judgement criteria for the picture and sound.

Item	Contents	Check	Item	Contents
Picture	Block noise		Sound	Distorted sound
	Crosscut noise			Noise (static, background noise, etc.)
	Dot noise			The sound level is too low.
	Picture disruption			The sound level is too high.
	Not bright enough			The sound level changes.
	Too bright			
	Flickering color			
	Color fading			

## 12. Block Diagram

### 12.1. Power Supply Block Diagram

### 12.2. Analog Video Block Diagram

### 12.3. Analog Audio Block Diagram

### 12.4. Analog Timer Block Diagram

### 12.5. HDMI Block Diagram

## 13. Schematic Diagram

### 13.1. Interconnection Schematic Diagram

### 13.2. Power Supply Section (Main P.C.B.(1/3)) Schematic Diagram (P)

### 13.3. A/V I/O (1/4) Section (Main P.C.B.(2/3)) Schematic Diagram (A)

### 13.4. A/V I/O (2/4) Section (Main P.C.B.(2/3)) Schematic Diagram (A)

### 13.5. A/V I/O (3/4) Section (Main P.C.B.(2/3)) Schematic Diagram (A)

### 13.6. A/V I/O (4/4) Section (Main P.C.B.(2/3)) Schematic Diagram (A)

### 13.7. Timer (1/4) Section (Main P.C.B.(3/3)) Schematic Diagram Schematic Diagram (FL)

### 13.8. Timer (2/4) Section (Main P.C.B.(3/3)) Schematic Diagram Schematic Diagram (FL)

### 13.9. Timer (3/4) Section (Main P.C.B.(3/3)) Schematic Diagram Schematic Diagram (FL)

### 13.10. Timer (4/4) Section (Main P.C.B.(3/3)) Schematic Diagram

## **Schematic Diagram (FL)**

### **13.11. HDMI Schematic Diagram**

### **13.12. SD Card Schematic Diagram**

### **13.13. DV Jack Schematic Diagram**

### **13.14. Front (L) Schematic Diagram**

## **14. Print Circuit Board**

### **14.1. Main P.C.B.**

#### **14.1.1. Main P.C.B. (1/4 Section)**

#### **14.1.2. Main P.C.B. (2/4 Section)**

#### **14.1.3. Main P.C.B. (3/4 Section)**

#### **14.1.4. Main P.C.B. (4/4 Section)**

#### **14.1.5. Main P.C.B. Address Information**

### **14.2. HDMI P.C.B.**

### **14.3. SD Card P.C.B., Front (L) P.C.B.**

### **14.4. DV Jack P.C.B.**

## **15. Appendix for Schematic Diagram**

### **15.1. Voltage and Waveform Chart**

#### **15.1.1. Main P.C.B.**

#### **15.1.2. HDMI P.C.B.**

#### **15.1.3. P59001 Connector**

#### **15.1.4. Waveform Chart**

## **16. Miscellaneous**

### **16.1. Abbreviations**

INITIAL/LOGO		ABBREVIATIONS
A	A0~UP	ADDRESS
	ACLK	AUDIO CLOCK
	AD0~UP	ADDRESS BUS
	ADATA	AUDIO PES PACKET DATA
	ALE	ADDRESS LATCH ENABLE
	AMUTE	AUDIO MUTE
	AREQ	AUDIO PES PACKET REQUEST
	ARF	
	ASI	AUDIO RF
	ASO	SERVO AMP INVERTED INPUT
	ASYNC	SERVO AMP OUTPUT
		AUDIO WORD DISTINCTION SYNC
B	BCK	BIT CLOCK (PCM)
	BCKIN	BIT CLOCK INPUT
	BDO	BLACK DROP OUT
	BLKCK	SUB CODE BLOCK CLOCK
	BOTTOM	CAP. FOR BOTTOM HOLD
	BYP	BYPATH
	BYTCK	BYTE CLOCK
C	CAV	CONSTANT ANGULAR
	CBDO	VELOCITY
	CD	CAP. BLACK DROP OUT
	CDSCK	COMPACT DISC
	CDSRDATA	CD SERIAL DATA CLOCK
		CD SERIAL DATA
	CDRF	CD RF (EFM) SIGNAL
	CDV	COMPACT DISC-VIDEO
	CHNDATA	CHANNEL DATA
	CKSL	SYSTEM CLOCK SELECT
	CLV	CONSTANT LINEAR VELOCITY
	COFTR	CAP. OFF TRACK
	CPA	CPU ADDRESS
	CPCS	CPU CHIP SELECT
	CPDT	CPU DATA
	CPUADR	CPU ADDRESS LATCH
	CPUADT	CPU ADDRESS DATA BUS
	CPUIRQ	CPU INTERRUPT REQUEST
	CPRD	CPU READ ENABLE
	CPWR	CPU WRITE ENABLE
	CS	CHIP SELECT
	CSYNCIN	COMPOSITE SYNC IN
	CSYNCOU	COMPOSITE SYNC OUT

INITIAL/LOGO		ABBREVIATIONS
D	DACCK	D/A CONVERTER CLOCK
	DEEMP	DEEMPHASIS BIT ON/OFF
	DEMPH	DEEMPHASIS SWITCHING
	DIG0~UP	FL DIGIT OUTPUT
	DIN	DATA INPUT
	DMSRCK	DM SERIAL DATA READ
	DMUTE	CLOCK
	DO	DIGITAL MUTE CONTROL
	DOUT0~UP	DROP OUT
		DATA OUTPUT
	DRF	DATA SLICE RF (BIAS)
	DRPOUT	DROP OUT SIGNAL
	DREQ	DATA REQUEST
	DRESP	DATA RESPONSE
	DSC	DIGITAL SERVO CONTROLLER
	DSLIF	
	DVD	DATA SLICE LOOP FILTER
		DIGITAL VIDEO DISC

INITIAL/LOGO		ABBREVIATIONS
E	EC	ERROR TORQUE CONTROL
	ECR	ERROR TORQUE CONTROL REFERENCE
	ENCSEL	ENCODER SELECT
	ETMCLK	EXTERNAL M CLOCK (81MHz/40.5MHz)
	ETSCLK	EXTERNAL S CLOCK (54MHz)
F	FBAL	FOCUS BALANCE
	FCLK	FRAME CLOCK
	FE	FOCUS ERROR
	FFI	FOCUS ERROR AMP
	FEO	INVERTED INPUT
	FG	FOCUS ERROR AMP OUTPUT
	FSC	FREQUENCY GENERATOR
	FSCK	FREQUENCY SUB CARRIER FS (384 OVER SAMPLING) CLOCK
G	GND	COMMON GROUNDING (EARTH)
H	HA0~UP	HOST ADDRESS
	HD0~UP	HOST DATA
	HINT	HOST INTERRUPT
	HRXW	HOST READ/WRITE



INITIAL/LOGO		ABBREVIATIONS
<b>I</b>	<b>IECOUT</b>	<b>IEC958 FORMAT DATA OUTPUT</b>
	<b>IPFRAG</b>	<b>INTERPOLATION FLAG</b>
	<b>IREF</b>	<b>I (CURRENT) REFERENCE</b>
	<b>ISEL</b>	<b>INTERFACE MODE SELECT</b>
<b>L</b>	<b>LDON</b>	<b>LASER DIODE CONTROL</b>
	<b>LPC</b>	<b>LASER POWER CONTROL</b>
	<b>LRCK</b>	<b>L CH/R CH DISTINCTION CLOCK</b>
<b>M</b>	<b>MA0~UP</b>	<b>MEMORY ADDRESS</b>
	<b>MCK</b>	<b>MEMORY CLOCK</b>
	<b>MCKI</b>	<b>MEMORY CLOCK INPUT</b>
	<b>MCLK</b>	<b>MEMORY SERIAL COMMAND CLOCK</b>
	<b>MDATA</b>	<b>MEMORY SERIAL COMMAND DATA</b>
	<b>MDQ0~UP</b>	<b>MEMORY SERIAL COMMAND DATA</b>
	<b>MDQM</b>	<b>MEMORY DATA INPUT/OUTPUT</b>
	<b>MLD</b>	<b>MEMORY DATA I/O MASK</b>
	<b>MPEG</b>	<b>MOVING PICTURE EXPERTS GROUP</b>
<b>O</b>	<b>ODC</b>	<b>OPTICAL DISC CONTROLLER</b>
	<b>OFTR</b>	<b>OFF TRACKING</b>
	<b>OSCI</b>	<b>OSCILLATOR INPUT</b>
	<b>OSCO</b>	<b>OSCILLATOR OUTPUT</b>
	<b>OSD</b>	<b>ON SCREEN DISPLAY</b>
<b>P</b>	<b>P1~UP</b>	<b>PORT</b>
	<b>PCD</b>	<b>CD TRACKING PHASE DIFFERENCE</b>
	<b>PCK</b>	<b>PLL CLOCK</b>
	<b>PDVD</b>	<b>DVD TRACKING PHASE DIFFERENCE</b>
	<b>PEAK</b>	<b>CAP. FOR PEAK HOLD</b>
	<b>PLLCLK /</b>	<b>CHANNEL PLL CLOCK</b>
	<b>PLLOK</b>	<b>PLL LOCK</b>
	<b>PWMCTL</b>	<b>PWM OUTPUT CONTROL</b>
	<b>PWMDA</b>	<b>PULSE WAVE MOTOR DRIVE A</b>
	<b>PWMOA, B</b>	<b>PULSE WAVE MOTOR OUT A, B</b>

INITIAL/LOGO		ABBREVIATIONS
R	RE	READ ENABLE
	RFENV	RF ENVELOPE
	RFO	RF PHASE DIFFERENCE
	RS	OUTPUT
	RSEL	(CD-ROM) REGISTER SELECT
	RST	RF POLARITY SELECT
	RSV	RESET RESERVE
S	SBI0, 1	SERIAL DATA INPUT
	SBO0	SERIAL DATA OUTPUT
	SBT0, 1	SERIAL CLOCK
	SCK	SERIAL DATA CLOCK
	SCKR	AUDIO SERIAL CLOCK
	SCL	RECEIVER
	SCLK	SERIAL CLOCK
	SDA	SERIAL CLOCK
	SEG0~UP	SERIAL DATA
	SELCLK	FL SEGMENT OUTPUT
	SEN	SELECT CLOCK
	SIN1, 2	SERIAL PORT ENABLE
	SOUT1, 2	SERIAL DATA IN
	SPDI	SERIAL DATA OUT
	SPDO	SERIAL PORT DATA INPUT
	SPEN	SERIAL PORT DATA OUTPUT
	SPRCLK	SERIAL PORT R/W ENABLE
	SPWCLK	SERIAL PORT READ CLOCK
	SQCK	SERIAL PORT WRITE CLOCK
	SQCX	SUB CODE Q CLOCK
	SRDATA	SUB CODE Q DATA READ
	SRMADR	CLOCK
	SRMDT0~7	SERIAL DATA SRAM ADDRESS BUS
	SS	SRAM DATA BUS 0~7
	STAT	START/STOP
	STCLK	STATUS
	STD0~UP	STREAM DATA CLOCK
	STENABLE	STREAM DATA STREAM DATA INPUT ENABLE
	STSEL	STREAM DATA POLARITY
	STVALID	SELECT
	SUBC	STREAM DATA VALIDITY
	SBCK	SUB CODE SERIAL
	SUBQ	SUB CODE CLOCK
	SYSCLK	SUB CODE Q DATA

	<b>SYSTEM CLOCK</b>
<b>INITIAL/LOGO</b>	<b>ABBREVIATIONS</b>
<b>T</b>	<b>TE</b> TRACKING ERROR <b>TIBAL</b> BALANCE CONTROL <b>TID</b> BALANCE OUTPUT 1 <b>TIN</b> BALANCE INPUT <b>TIP</b> BALANCE INPUT <b>TIS</b> BALANCE OUTPUT 2 <b>TPSN</b> OP AMP INPUT <b>TPSO</b> OP AMP OUTPUT <b>TPSP</b> OP AMP INVERTED INPUT <b>TRCRS</b> TRACK CROSS SIGNAL <b>TRON</b> TRACKING ON <b>TRSON</b> TRAVERSE SERVO ON

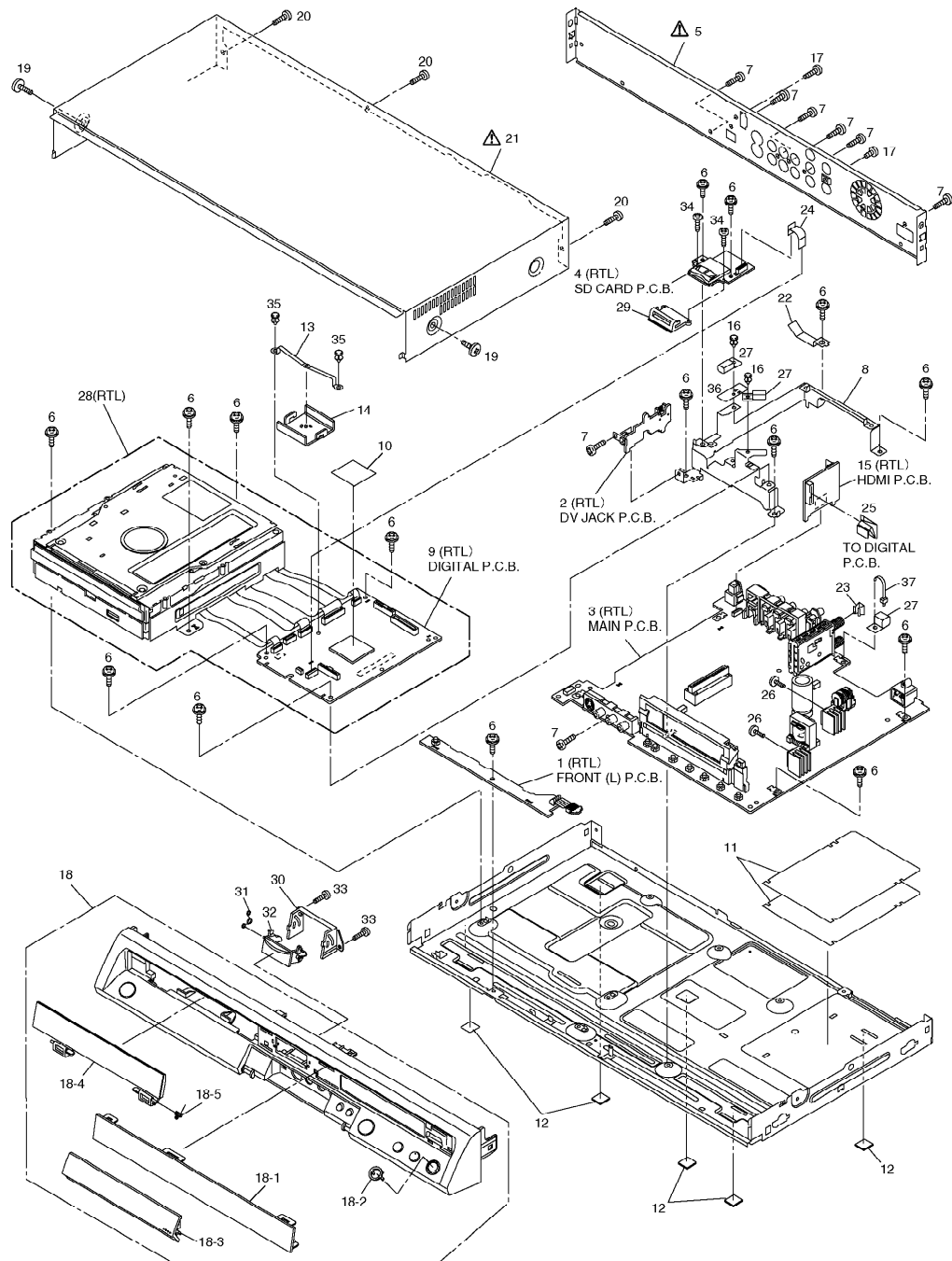
<b>INITIAL/LOGO</b>	<b>ABBREVIATIONS</b>
<b>V</b>	<b>VBLANK</b> V BLANKING <b>VCC</b> COLLECTOR POWER SUPPLY VOLTAGE <b>VCDCONT</b> VIDEO CD CONTROL (TRACKING BALANCE) <b>VDD</b> DRAIN POWER SUPPLY VOLTAGE <b>VFB</b> VOLTAGE REFERENCE <b>VREF</b> VIDEO FEED BACK <b>VSS</b> VOLTAGE REFERENCE SOURCE POWER SUPPLY VOLTAGE
<b>W</b>	<b>WAIT</b> BUS CYCLE WAIT <b>WDCK</b> WORD CLOCK <b>WEH</b> WRITE ENABLE HIGH <b>WSR</b> WORD SELECT RECEIVER

INITIAL/LOGO		ABBREVIATIONS
X	X	X' TAL
	XALE	X ADDRESS LATCH ENABLE
	XAREQ	X AUDIO DATA REQUEST
	XCDROM	X CD ROM CHIP SELECT
	XCS	X CHIP SELECT
	XCSYNC	X COMPOSITE SYNC
	XDS	X DATA STROBE
	XHSYNCO	X HORIZONTAL SYNC OUTPUT
	XHINT	XH INTERRUPT REQUEST
	XI	X' TAL OSCILLATOR INPUT
	XINT	X INTERRUPT
	XMW	X MEMORY WRITE ENABLE
	XO	X' TAL OSCILLATOR OUTPUT
	XRE	X READ ENABLE
	XSRMCE	X SRAM CHIP ENABLE
	XSRMOE	X SRAM OUTPUT ENABLE
	XSRMWE	X SRAM WRITE ENABLE
	XVCS	X V-DEC CHIP SELECT
	XVDS	X V-DEC CONTROL BUS
	XVSYNCO	STROBE
		X VERTICAL SYNC OUTPUT

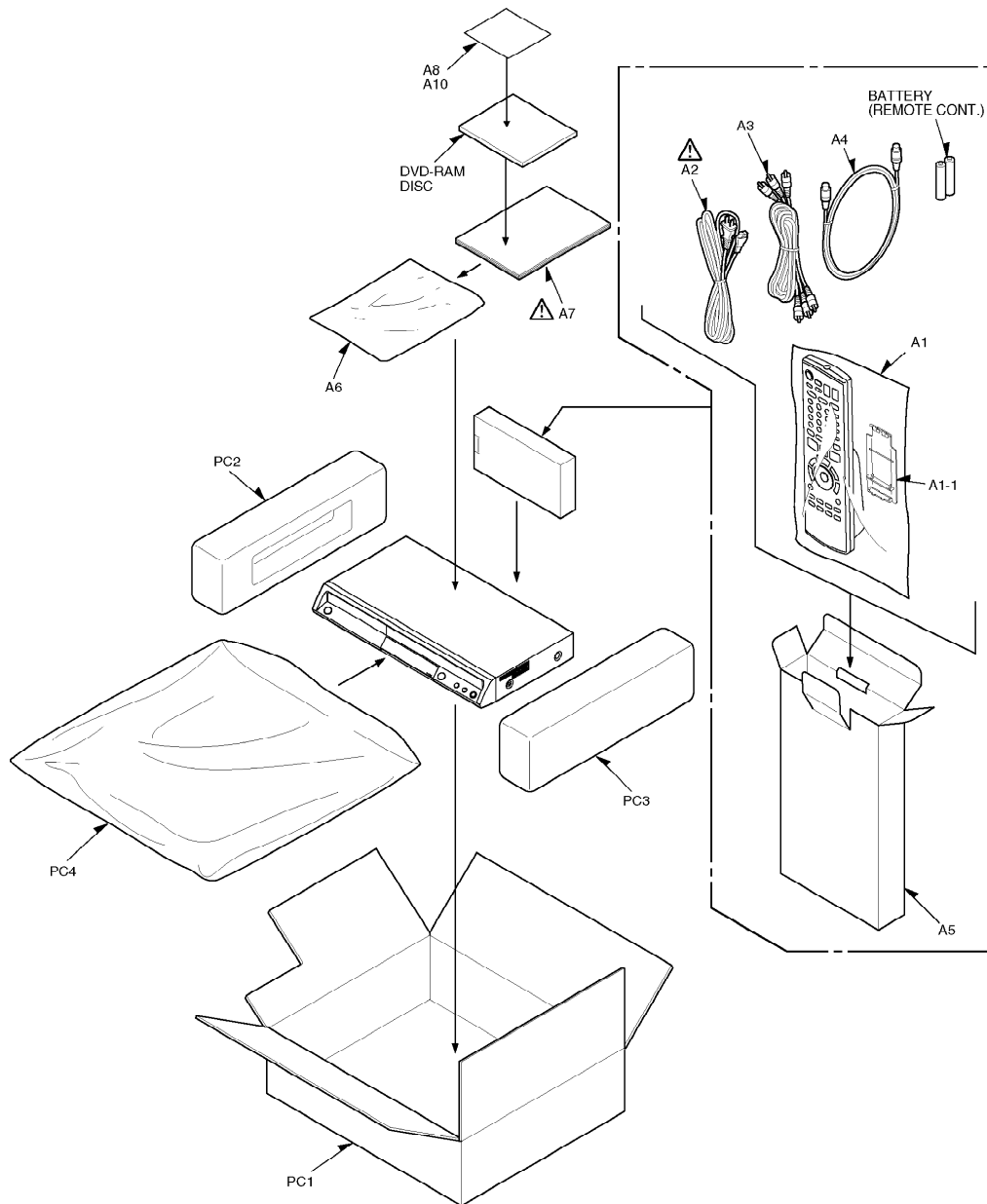
## 17. Parts and Exploded Views

### 17.1. Exploded Views

#### 17.1.1. Casing Parts & Mechanism Section



### 17.1.2. Packing & Accessories Section



## 17.2. Replacement Parts List

### Notes:

#### \*Important safety notice:

Components identified by  mark have special characteristics important for safety.

Furthermore, special parts which have purposes of fire-retardant (resistors), high-quality sound (capacitors), low-noise (resistors), etc. are used.

When replacing any of components, be sure to use only manufactures specified parts shown in the parts list.

\*Warning: This product uses a laser diode. Refer to caution statements.

\*Capacity values are in microfarads (  $\mu$  F) unless specified otherwise, P=Pico-farads (pF), F= Farads (F).

\*Resistance values are in ohms, unless specified otherwise, 1K=1,000 (OHM), 1M=1,000k (OHM).

\*The marking (RTL) indicates the retention time is limited for this item. After the discontinuation

of this assembly in production, it will no longer be available.

\*“(IA)-(IB)”, marks in Remarks indicate languages of instruction manuals. [(IA): English, (IB): Canadian French]

\*Parts indicated with PAVC-CSG in the Remarks column are supplied by PAVC-CSG.

\*All parts except parts indicated with (PAVC-CSG) in the Remarks column are supplied by PAVCSG.

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
■	RFKB79117C	MAIN P.C.B.		(RTL)
C1101	ECQU2A104MLA	250V 0.1U	1	
C1121	ECQU2A223MLC	100V 0.022U	1	
C1122	ECKMNA102MEV	0.01U	1	
C1123	ECKMNA102MEV	0.01U	1	
C1125	ECKWNA102MEV	250V 1000P	1	
C1143	EEUED2V101E	350V 100U	1	
C1150	F2A1V560A731	35V 56P	1	
C1151	F1B3A182A009	250V 1800P	1	
C1152	ECJ1VC1H101J	50V 100P	1	
C1153	F1H1H222A798	50V 2200P	1	
C1154	ECJ1VB1H102K	50V 1000P	1	
C1200	ECQV1H224JL3	50V 0.22U	1	
C1201	ECJ1VB1C473K	16V 0.047U	1	
C1202	ECJ1VB1C104K	16V 0.1U	1	
C1260	F2A1C1520021	16V 1500P	1	
C1261	F2A1A221A773	10V 220U	1	
C1270	F2A1C8210008	16V 820P	1	
C1271	F2A1E2210067	25V 220	1	
C1280	F2A1A6810022	10V 680P	1	
C1281	F2A1E4700048	25V 47U	1	
C1300	F2A1A470A388	10V 47U	1	
C1301	ECJ1VB1C104K	16V 0.1U	1	
C1303	F2A1A1010102	10V 100U	1	
C1305	F2A1E1010067	25V 100U	1	
C1501	F1H1A105A028	10V 1U	1	
C1502	F1H1A105A028	10V 1U	1	
C1504	F1H1A105A028	10V 1U	1	
C1505	ECJ1VB0J105K	6.3V 1U	1	
C1506	F1H1A105A028	10V 1U	1	
C1507	F2A1A470A388	10V 47U	1	
C1509	F1J0J106A014	6.3V 10U	1	
C1510	F1H1A105A028	10V 1U	1	
C1511	F1J0J106A014	6.3V 10U	1	
C1516	ECJ1VB1H103K	50V 0.01U	1	
C3001	ECJ1VB1C104K	16V 0.1U	1	
C3002	F1H1C333A091	16V 0.033U	1	
C3003	ECJ1VB1C104K	16V 0.1U	1	
C3007	ECJ1VB1H103K	50V 0.01U	1	
C3008	ECJ1VB1H103K	50V 0.01U	1	
C3009	ECJ1VB1H103K	50V 0.01U	1	
C3010	F2A1H2200033	50V 22P	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
C3011	ECJ1VB1H103K	50V 0.01U	1	
C3012	ECJ1VB1C104K	16V 0.1U	1	
C3013	F2J1C4700005	16V 47U	1	
C3014	ECJ1VB1C104K	16V 0.1U	1	
C3015	ECJ1VB1H103K	50V 0.01U	1	
C3017	ECJ1VB1H103K	50V 0.01U	1	
C3018	ECJ1VB1H103K	50V 0.01U	1	
C3019	F2A1H100A150	50V 10U	1	
C3020	ECJ1VB1C104K	16V 0.1U	1	
C3021	ECJ1VB1H103K	50V 0.01U	1	
C3022	F2J1C4700005	16V 47U	1	
C3023	ECJ1VB1H103K	50V 0.01U	1	
C3024	ECJ1VB1H103K	50V 0.01U	1	
C3025	ECJ1VB1H103K	50V 0.01U	1	
C3026	ECJ1VB1C104K	16V 0.1U	1	
C3027	F2A1E4700048	25V 47U	1	
C3028	ECJ1VB1H103K	50V 0.01U	1	
C3029	ECJ1VB1H103K	50V 0.01U	1	
C3030	ECJ1VB1H103K	50V 0.01U	1	
C3031	ECJ1VB1H103K	50V 0.01U	1	
C3032	F2A1E4700048	25V 47U	1	
C3033	F2A0J471A247	6.3V 470U	1	
C3034	F2A1E470A205	25V 47U	1	
C3035	F2A0J331A247	6.3V 330U	1	
C3036	F2A0J331A247	6.3V 330U	1	
C3037	F2A1E470A205	25V 47U	1	
C3038	F2A0J471A247	6.3V 470U	1	
C3039	F2A1E470A205	25V 47U	1	
C3040	F2A0J471A247	6.3V 470U	1	
C3041	ECJ1VB1H103K	50V 0.01U	1	
C3042	ECJ1VB1H103K	50V 0.01U	1	
C3901	ECJ1VB1H103K	50V 0.01U	1	
C3903	ECJ1VB1C104K	16V 0.1U	1	
C3905	ECJ1VB1H103K	50V 0.01U	1	
C3907	ECJ1VB1C104K	16V 0.1U	1	
C3908	ECJ1VB1H103K	50V 0.01U	1	
C4001	ECJ1VF1C104Z	16V 0.1U	1	
C4002	ECJ1VF1C104Z	16V 0.1U	1	
C4003	F2A1H1R0A236	50V 1U	1	
C4004	F2A1H1R0A236	50V 1U	1	
C4005	ECJ1VB1C105K	16V 1U	1	
C4006	ECJ1VB1C105K	16V 1U	1	
C4007	ECJ2VB1E104K	25V 0.1U	1	
C4008	ECJ1VF1C104Z	16V 0.1U	1	
C4009	ECJ1VF1C104Z	16V 0.1U	1	
C4010	F2A1C221A236	16V 220U	1	
C4011	F1H1H560A799	50V 56P	1	
C4012	F1H1H560A799	50V 56P	1	
C4013	ECJ1VF1C104Z	16V 0.1U	1	
C4014	F2A1C471A236	16V 470U	1	
C4015	F2A1H1R0A236	50V 1U	1	
C4016	F2A1H1R0A236	50V 1U	1	
C4017	F2A1E470A205	25V 47U	1	
C4018	F2A1E470A205	25V 47U	1	



Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
C4019	F2A1H100A236	50V 10U	1	
C4020	F2A1H100A236	50V 10U	1	
C4021	F2A1E470A205	25V 47U	1	
C4022	F2A1E470A205	25V 47U	1	
C4023	ECJ1VC1H102J	50V 1000P	1	
C4024	ECJ1VC1H102J	50V 1000P	1	
C4025	F2A0J471A247	6.3V 470U	1	
C4027	ECQV1H104JL3	50V 0.1U	1	
C4028	ECJ1VF1C104Z	16V 0.1U	1	
C4029	ECJ1VF1C104Z	16V 0.1U	1	
C4030	ECQV1H104JL3	50V 0.1U	1	
C4904	F2A1A101A206	10V 100U	1	
C4905	ECJ1VF1C104Z	16V 0.1U	1	
C7403	ECJ1VB1C104K	16V 0.1U	1	
C7504	ECJ1VC1H101J	50V 100P	1	
C7505	ECJ1VC1H101J	50V 100P	1	
C7506	ECJ1VC1H101J	50V 100P	1	
C7507	ECJ1VB1H103K	50V 0.01U	1	
C7508	ECJ1VB1H103K	50V 0.01U	1	
C7509	ECJ1VB1H103K	50V 0.01U	1	
C7512	ECJ1VC1H240J	50V 24	1	
C7513	ECJ1VC1H270J	50V 27P	1	
C7514	ECJ1VB1C104K	16V 0.1U	1	
C7516	ECJ1VB1C104K	16V 0.1U	1	
C7519	ECJ1VB1C104K	16V 0.1U	1	
C7520	ECJ1VB1C104K	16V 0.1U	1	
C7521	ECJ1VC1H101J	50V 100P	1	
C7522	F2A0J470A245	6.3V 47U	1	
C7523	F1H1A105A028	10V 1U	1	
C7524	F2A1H100A820	50V 10P	1	
C7527	F2A1C221A877	16V 220P	1	
C7530	F2A1C221A877	16V 220P	1	
C7531	ECQB1H392KF3	50V 3900P	1	
C7532	F2A1V470A654	35V 47P	1	
C7533	F2A1H100A820	50V 10P	1	
C7538	F2A0J102A581	6.3V 1000U	1	
C7561	ECJ1VB1C104K	16V 0.1U	1	
C7801	F1B1H102A117	50V 0.01U	1	
C7802	F1B1H103A037	50V 0.01U	1	
C7805	ECJ1VC1H270J	50V 27P	1	
C7823	F2A0J470A245	6.3V 47U	1	
C7824	ECJ1VB1H103K	50V 0.01U	1	
C7825	F2A1H1R0A234	50V 1U	1	
C7826	ECJ1VB1H103K	50V 0.01U	1	
C7827	F1H1H470A799	50V 47P	1	
C7828	F1H1H470A799	50V 47P	1	
C7829	ECJ1VB1H103K	50V 0.01U	1	
C7830	F2A0J470A245	6.3V 47U	1	
D1120	B0EDKT000009	DIODE	1	
D1150	B0HAGM000006	DIODE	1	
D1151	MAZ4270NMF	DIODE	1	
D1152	MAZ4130NMF	DIODE	1	
D1153	MA2C165001VT	DIODE	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
D1260	B0JBSE000021	DIODE	1	
D1270	B0JAQG000005	DIODE	1	
D1280	B0JAQE000004	DIODE	1	
D1281	B0JCPE000015	DIODE	1	
D1500	B0JCPE000015	DIODE	1	
D1501	B0JCPE000015	DIODE	1	
D1502	B0JCPE000015	DIODE	1	
D4001	MA2C165001VT	DIODE	1	
D7401	B0JACE000001	DIODE	1	
D7502	MA2C165001VT	DIODE	1	
D7504	MAZ4180NHF	DIODE	1	
D7506	B0JAMD000026	DIODE	1	
D7507	B0AADM000003	DIODE	1	
D7508	B0AADM000003	DIODE	1	
D7510	B0JDCE000002	DIODE	1	
D7511	MAZ4220NLF	DIODE	1	
D7512	B0BA03600021	DIODE	1	
D7801	B0BA03000015	DIODE	1	
DP7501	A2BD00000144	DISPLAY TUBE	1	
F1101	K5D162BK0005	FUSE	1	⚠
IC1150	C0DACZH00022	IC	1	
IC1200	C0DAEMB00003	IC	1	
IC1302	C0CBCYG00004	IC	1	
IC1501	C0CBCDC00054	IC	1	
IC1502	C0CBCDC00052	IC	1	
IC1503	C0DBGHF00001	IC	1	
IC1505	C0CBCBG00013	IC	1	
IC3001	C1AB00001979	IC	1	
IC4001	C1AB00001920	IC	1	
IC4002	C0DBAHD00013	IC	1	
IC4003	C0CBCDC00027	IC	1	
IC4901	B3ZAZ0000016	IC	1	
IC7401	RFKFM6016K	IC	1	(PAVC-CSG)
IC7501	MN67788RA	IC	1	
IC7512	C0EBE0000504	IC	1	
IC7514	C0EBJ0000336	IC	1	
IP1260	K5H2022A0011	IC PROTECTOR	1	
IP1270	K5H302100004	IC PROTECTOR	1	
IP1280	K5H302100004	IC PROTECTOR	1	
IP7501	K5H7512A0010	IC PROTECTOR	1	
IR7501	PNA4618M09VT	REMOTE SENSOR	1	
JK3901	K2HE219B0004	JACK,OUT/IN1	1	
JK3903	K2HA304B0007	JACK,COMPONENT VIDEO OUT	1	
JK3905	K2HE1YYB0002	JACK,IN2	1	
K1280	ERJ3GEY0R00V	1/10W 0	1	
K1305	ERJ3GEY0R00V	1/10W 0	1	
K1310	ERJ3GEY0R00V	1/10W 0	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
K1502	ERJ3GEY0R00V	1/10W 0	1	
K7501	ERJ3GEY0R00V	1/10W 0	1	
K7502	ERJ3GEY0R00V	1/10W 0	1	
K7504	ERJ3GEY0R00V	1/10W 0	1	
K7508	ERJ3GEY0R00V	1/10W 0	1	
K7801	ERJ3GEY0R00V	1/10W 0	1	
K7802	ERJ3GEY0R00V	1/10W 0	1	
K7806	ERJ3GEY0R00V	1/10W 0	1	
K7807	ERJ3GEY0R00V	1/10W 0	1	
L1120	G0B100E00002	COIL 10UH	1	
L1121	G0B100E00002	COIL 10UH	1	
L1260	G0A100HA0023	COIL 10UH	1	
L1270	G0A100HA0023	COIL 10UH	1	
L1280	G0A220GA0026	COIL 22UH	1	
L1301	G0A100ZA0041	COIL 10UH	1	
L3001	G0C220JA0019	COIL 22UH	1	
L3002	G0C220JA0019	COIL 22UH	1	
L7501	G0C390JA0055	COIL 39UH	1	
L7502	G0C220JA0019	COIL 22UH	1	
LB1122	J0JKB0000003	COIL	1	
LB1123	J0JKB0000003	COIL	1	
LB1150	J0JHC0000032	COIL	1	
LB1261	J0JKB0000003	COIL	1	
LB1271	J0JKB0000003	COIL	1	
LB1281	J0JKB0000003	COIL	1	
LB3901	J0JCC0000103	COIL	1	
LB3902	J0JCC0000103	COIL	1	
LB3903	J0JCC0000103	COIL	1	
LB3904	J0JCC0000103	COIL	1	
LB3905	J0JCC0000103	COIL	1	
LB3906	J0JCC0000103	COIL	1	
LB3907	J0JCC0000103	COIL	1	
LB3908	J0JCC0000103	COIL	1	
LB3909	J0JCC0000103	COIL	1	
LB3913	J0JCC0000103	COIL	1	
LB3914	J0JCC0000103	COIL	1	
LB3915	J0JCC0000103	COIL	1	
LB3917	J0JGC0000020	COIL	1	
LB3918	J0JCC0000103	COIL	1	
LB3919	J0JCC0000103	COIL	1	
LB3920	J0JGC0000020	COIL	1	
LB4901	J0JHC0000032	COIL	1	
LB4902	J0JCC0000103	COIL	1	
LB4903	J0JCC0000103	COIL	1	
LB4911	J0JCC0000103	COIL	1	
LB4912	J0JCC0000103	COIL	1	
LB4913	J0JCC0000103	COIL	1	
LB4914	J0JCC0000103	COIL	1	
LB4915	J0JCC0000103	COIL	1	
LB4916	J0JCC0000103	COIL	1	
LB7401	J0JHC0000048	FILTER	1	
LB7402	J0JHC0000048	FILTER	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
LB7403	J0JHC0000048	FILTER	1	
LB7404	J0JGC0000020	COIL	1	
LB7405	J0JGC0000020	COIL	1	
LB7406	J0JGC0000020	COIL	1	
LB7407	J0JGC0000020	COIL	1	
LB7408	J0JGC0000020	COIL	1	
LB7409	J0JHC0000048	FILTER	1	
LB7410	J0JHC0000048	FILTER	1	
LB7411	J0JGC0000020	COIL	1	
LB7412	J0JGC0000020	COIL	1	
LB7501	ERJ3GEY0R00V	1/10W 0	1	
LB7503	ERJ3GEY0R00V	1/10W 0	1	
LB7504	ERJ3GEY0R00V	1/10W 0	1	
LB7801	J0JHC0000032	COIL	1	
LB7802	J0JHC0000032	COIL	1	
LB7803	J0JHC0000032	COIL	1	
P1101	K2AB2B000007	AC INLET	1	⚠
P7401	K1KY64A00001	CONNECTOR(64P)	1	
P7502	K1KY10AA0107	CONNECTOR(10P)	1	
P7505	K1KB04AA0063	CONNECTOR(4P)	1	
Q1200	B3PBA0000237	TRANSISTOR	1	
Q4001	2SD0601A0L	TRANSISTOR	1	
Q4002	2SD0601A0L	TRANSISTOR	1	
Q7401	B1CFHC000003	TRANSISTOR	1	
Q7402	B1CFHC000003	TRANSISTOR	1	
Q7502	B1BABK000001	TRANSISTOR	1	
Q7503	2SD0601A0L	TRANSISTOR	1	
Q7504	2SD0601A0L	TRANSISTOR	1	
Q7510	2SD0601A0L	TRANSISTOR	1	
Q7511	2SD0601A0L	TRANSISTOR	1	
Q7513	B1CFHC000003	TRANSISTOR	1	
Q7514	2SD0601A0L	TRANSISTOR	1	
Q7801	B1ADCF000154	TRANSISTOR	1	
QR4001	UNR521100L	TRANSISTOR	1	
QR4002	UNR511100L	TRANSISTOR	1	
QR4003	UNR521100L	TRANSISTOR	1	
QR7503	UNR511300L	TRANSISTOR	1	
R391	ERJ3GEYJ750V	1/10W 75	1	
R1120	ERDS1TJ474	1W 470K	1	
R1150	ERJ3GEYJ8R2V	1/10W 8.2	1	
R1151	ERJ3GEYJ103V	1/10W 10K	1	
R1152	ERJ3GEYJ752V	1/10W 7.5K	1	
R1153	ERJ3RBD183V	1/16W 18K	1	
R1154	ERJ3GEY0R00V	1/10W 0	1	
R1155	ERJ3RBD151V	1/16W 150	1	
R1156	ERJ3RBD682V	1/16W 6.8K	1	
R1157	ERJ3GEYJ8R2V	1/10W 8.2	1	
R1200	ERJ3RBD223V	1/16W 22K	1	
R1201	ERJ3RBD102V	1/16W 1K	1	
R1202	ERJ3GEYJ103V	1/10W 10K	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
R1203	ERJ3GEYJ184V	1/10W 180K	1	
R1204	ERJ3RBD562V	1/16W 5.6K	1	
R1206	ERJ3RBD242V	1/16W 2.4K	1	
R1207	ERJ3RBD241V	1/16W 240	1	
R1208	ERJ3RBD222V	1/16W 2.2K	1	
R1209	ERJ3RBD102V	1/16W 1K	1	
R1301	ERJ3RED820V	1/16W 82	1	
R1302	ERJ3RBD182V	1/16W 1.8K	1	
R1303	ERJ3RBD202V	1/16W 2K	1	
R3001	ERJ3GEYJ105V	1/10W 1M	1	
R3002	ERJ3GEYJ750V	1/10W 75	1	
R3004	ERJ3GEYJ221V	1/10W 220	1	
R3005	ERJ3GEYJ221V	1/10W 220	1	
R3006	ERJ3RBD153V	1/16W 15K	1	
R3007	ERJ3RBD104V	1/16W 100K	1	
R3010	ERJ3GEYJ103V	1/10W 10K	1	
R3011	ERJ3GEYJ103V	1/10W 10K	1	
R3012	ERJ3RBD472V	1/16W 4.7K	1	
R3013	ERJ3RBD472V	1/16W 4.7K	1	
R3014	ERJ3RBD472V	1/16W 4.7K	1	
R3015	ERJ3RBD472V	1/16W 4.7K	1	
R3016	ERJ3RBD472V	1/16W 4.7K	1	
R3902	ERJ3GEYJ750V	1/10W 75	1	
R3904	ERJ3GEYJ102V	1/10W 1K	1	
R3905	ERJ3GEYJ750V	1/10W 75	1	
R3906	ERJ3GEYJ750V	1/10W 75	1	
R3907	ERJ3GEYJ750V	1/10W 75	1	
R3908	ERJ3GEYJ750V	1/10W 75	1	
R3909	ERJ3GEYJ912V	1/10W 9.1K	1	
R3918	ERJ3GEYJ750V	1/10W 75	1	
R3919	ERJ3GEYJ750V	1/10W 75	1	
R3920	ERJ3GEYJ750V	1/10W 75	1	
R3926	ERJ3GEYJ102V	1/10W 1K	1	
R3927	ERJ3GEYJ750V	1/10W 75	1	
R3928	ERJ3GEYJ750V	1/10W 75	1	
R3929	ERJ3GEYJ750V	1/10W 75	1	
R4001	ERJ3GEYJ104V	1/10W 100K	1	
R4002	ERJ3GEYJ104V	1/10W 100K	1	
R4003	ERJ3GEYJ102V	1/10W 1K	1	
R4004	ERJ3GEYJ102V	1/10W 1K	1	
R4005	ERJ3GEYJ104V	1/10W 100K	1	
R4006	ERJ3GEYJ104V	1/10W 100K	1	
R4007	ERJ3GEYJ101V	1/10W 100	1	
R4008	ERJ3GEYJ101V	1/10W 100	1	
R4009	D0HB153ZA002	1/10W 15K	1	
R4010	D0HB153ZA002	1/10W 15K	1	
R4011	ERJ3GEYJ102V	1/10W 1K	1	
R4012	ERJ3GEYJ102V	1/10W 1K	1	
R4013	D0HB103ZA002	1/10W 10K	1	
R4014	D0HB103ZA002	1/10W 10K	1	
R4015	ERJ3GEYJ104V	1/10W 100K	1	
R4016	ERJ3GEYJ104V	1/10W 100K	1	
R4017	D0HB622ZA002	1/16W 6.2K	1	
R4018	D0HB622ZA002	1/16W 6.2K	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
R4019	D0HB392ZA002	1/16W 3.9K	1	
R4020	D0HB392ZA002	1/16W 3.9K	1	
R4021	ERJ3GEYJ103V	1/10W 10K	1	
R4022	ERJ3GEYJ473V	1/10W 47K	1	
R4023	ERJ3GEYJ473V	1/10W 47K	1	
R4024	ERJ3GEYJ681V	1/10W 680	1	
R4025	ERJ3GEYJ681V	1/10W 680	1	
R4026	ERJ3GEYJ821V	1/10W 820	1	
R4027	ERJ3GEYJ821V	1/10W 820	1	
R4028	ERJ3GEYJ221V	1/10W 220	1	
R4029	ERJ3GEYJ221V	1/10W 220	1	
R4901	ERJ3GEY0R00V	1/10W 0	1	
R4902	ERJ3GEY0R00V	1/10W 0	1	
R7401	ERJ3GEY0R00V	1/10W 0	1	
R7402	ERJ3GEYJ472V	1/10W 4.7K	1	
R7403	ERJ3GEYJ472V	1/10W 4.7K	1	
R7404	ERJ3GEY0R00V	1/10W 0	1	
R7406	ERJ3GEYJ472V	1/10W 4.7K	1	
R7501	ERJ3GEYJ473V	1/10W 47K	1	
R7502	ERJ3GEYJ473V	1/10W 47K	1	
R7504	ERJ3GEY0R00V	1/10W 0	1	
R7505	ERJ3GEY0R00V	1/10W 0	1	
R7506	ERJ3GEYJ822V	1/10W 8.2K	1	
R7507	ERJ3GEYJ473V	1/10W 47K	1	
R7508	ERJ3GEYJ473V	1/10W 47K	1	
R7509	ERJ3GEYJ473V	1/10W 47K	1	
R7510	ERJ3GEYJ822V	1/10W 8.2K	1	
R7511	ERJ3GEYJ272V	1/10W 2.7K	1	
R7513	ERJ3GEYJ472V	1/10W 4.7K	1	
R7514	ERJ3GEYJ101V	1/10W 100	1	
R7515	ERJ3GEYJ101V	1/10W 100	1	
R7516	ERJ3GEYJ101V	1/10W 100	1	
R7517	ERJ3GEYJ822V	1/10W 8.2K	1	
R7518	ERJ3GEYJ101V	1/10W 100	1	
R7519	ERJ3GEYJ101V	1/10W 100	1	
R7520	ERJ3GEYJ101V	1/10W 100	1	
R7522	ERJ3GEYJ101V	1/10W 100	1	
R7523	ERJ3GEYJ101V	1/10W 100	1	
R7524	ERJ3GEYJ101V	1/10W 100	1	
R7525	ERJ3GEYJ103V	1/10W 10K	1	
R7526	ERJ3GEYJ472V	1/10W 4.7K	1	
R7527	ERJ3GEYJ103V	1/10W 10K	1	
R7528	ERJ3GEYJ472V	1/10W 4.7K	1	
R7530	ERJ3GEY0R00V	1/10W 0	1	
R7531	ERJ3GEY0R00V	1/10W 0	1	
R7532	ERJ3GEYJ101V	1/10W 100	1	
R7533	ERJ3GEYJ104V	1/10W 100K	1	
R7534	ERJ3GEYJ223V	1/10W 22K	1	
R7535	ERJ3GEYJ101V	1/10W 100	1	
R7540	ERJ3GEY0R00V	1/10W 0	1	
R7541	ERJ3GEYJ101V	1/10W 100	1	
R7545	ERDS2TJ271T	1/4W 270	1	
R7548	ERJ3GEYJ103V	1/10W 10K	1	
R7549	ERJ3GEYJ473V	1/10W 47K	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
R7550	ERJ3GEYJ562V	1/10W 5.6K	1	
R7551	ERJ3GEYJ470V	1/10W 47	1	
R7552	ERJ3GEYJ473V	1/10W 47K	1	
R7553	ERJ3GEYJ473V	1/10W 47K	1	
R7558	ERJ3GEYJ103V	1/10W 10K	1	
R7559	ERJ3GEYJ103V	1/10W 10K	1	
R7562	ERJ3GEYJ472V	1/10W 4.7K	1	
R7564	ERJ3GEYJ103V	1/10W 10K	1	
R7569	ERJ3GEYJ472V	1/10W 4.7K	1	
R7570	ERJ3GEYJ103V	1/10W 10K	1	
R7572	ERJ3GEYJ103V	1/10W 10K	1	
R7573	ERJ3GEYJ274V	1/10W 270K	1	
R7574	ERJ3GEYJ473V	1/10W 47K	1	
R7575	ERJ3GEYJ473V	1/10W 47K	1	
R7584	ERJ3GEYJ101V	1/10W 100	1	
R7585	ERJ3GEYJ473V	1/10W 47K	1	
R7586	ERJ3GEYJ473V	1/10W 47K	1	
R7587	ERJ3GEYJ473V	1/10W 47K	1	
R7590	ERJ3GEYJ473V	1/10W 47K	1	
R7591	ERJ3GEYJ473V	1/10W 47K	1	
R7592	ERJ3GEYJ473V	1/10W 47K	1	
R7593	ERJ3GEYJ473V	1/10W 47K	1	
R7594	ERJ3GEYJ101V	1/10W 100	1	
R7595	ERJ3GEYJ101V	1/10W 100	1	
R7596	ERJ3GEYJ101V	1/10W 100	1	
R7597	ERJ3GEYJ101V	1/10W 100	1	
R7598	ERDS2TJ470T	1/4W 47	1	
R7599	ERJ3GEYJ473V	1/10W 47K	1	
R7600	ERJ3GEYJ272V	1/10W 2.7K	1	
R7601	ERJ3GEYJ272V	1/10W 2.7K	1	
R7603	ERJ3GEYJ562V	1/10W 5.6K	1	
R7605	ERJ3GEYJ562V	1/10W 5.6K	1	
R7801	J0JCC0000103	COIL	1	
R7802	J0JCC0000103	COIL	1	
R7812	ERDS2TJ102T	1/4W 1K	1	
R7814	ERJ3GEYJ681V	1/10W 680	1	
R7815	J0JCC0000103	COIL	1	
R7816	J0JCC0000103	COIL	1	
S7501	EVQ11A04M	SWITCH,REC	1	
S7502	EVQ11A04M	SWITCH,PLAY	1	
S7503	EVQ11A04M	SWITCH,STOP	1	
S7505	EVQ11A04M	SWITCH,SELECT	1	
S7506	EVQ11A04M	SWITCH,CH DOWN	1	
S7507	EVQ11A04M	SWITCH,CH UP	1	
T1150	G4D2A0000249	TRANSFORMER	1	⚠
T7501	G4D1A0000118	TRANSFORMER	1	⚠
TU7801	ENGD6401DF	TV TUNERS	1	
VA1101	ERZVGAD471	VARISTOR	1	
W503	ERJ6GEY0R00V	1/8W 0	1	



Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
W504	ERJ6GEY0R00V	1/8W 0	1	
W505	ERJ6GEY0R00V	1/8W 0	1	
W506	ERJ3GEY0R00V	1/10W 0	1	
W507	ERJ6GEY0R00V	1/8W 0	1	
W508	ERJ6GEY0R00V	1/8W 0	1	
W509	ERJ6GEY0R00V	1/8W 0	1	
W510	ERJ6GEY0R00V	1/8W 0	1	
W511	ERJ3GEY0R00V	1/10W 0	1	
W512	ERJ6GEY0R00V	1/8W 0	1	
W513	ERJ6GEY0R00V	1/8W 0	1	
W514	ERJ6GEY0R00V	1/8W 0	1	
W515	ERJ3GEY0R00V	1/10W 0	1	
W516	ERJ6GEY0R00V	1/8W 0	1	
W517	ERJ3GEY0R00V	1/10W 0	1	
W518	ERJ3GEY0R00V	1/10W 0	1	
W519	ERJ6GEY0R00V	1/8W 0	1	
W520	ERJ3GEY0R00V	1/10W 0	1	
W521	ERJ6GEY0R00V	1/8W 0	1	
W522	ERJ6GEY0R00V	1/8W 0	1	
W523	ERJ6GEY0R00V	1/8W 0	1	
W525	ERJ6GEY0R00V	1/8W 0	1	
W526	ERJ3GEY0R00V	1/10W 0	1	
W527	ERJ3GEY0R00V	1/10W 0	1	
W528	ERJ3GEY0R00V	1/10W 0	1	
W529	ERJ3GEY0R00V	1/10W 0	1	
W530	ERJ3GEY0R00V	1/10W 0	1	
W531	ERJ3GEY0R00V	1/10W 0	1	
W532	ERJ3GEY0R00V	1/10W 0	1	
W533	ERJ3GEY0R00V	1/10W 0	1	
W534	ERJ6GEY0R00V	1/8W 0	1	
W535	ERJ3GEY0R00V	1/10W 0	1	
W536	ERJ3GEY0R00V	1/10W 0	1	
X7502	H0A327200108	CRYSTAL OSCILLATOR	1	
X7503	EFOMC1005T4	CRYSTAL OSCILLATOR	1	
ZA1101	EYF52BCY	FUSE HOLDER	1	
ZA1102	EYF52BCY	FUSE HOLDER	1	
■	VEP73135A	DV JACK P.C.B.		(RTL)
P37001	K1KA06B00181	CONNECTOR(6P)	1	
P37002	K2HZ104B0012	CONNECTOR(104P)	1	
■	VEP70135A	SD CARD P.C.B.		(RTL)
P7001	K1KY04AA0066	CONNECTOR(4P)	1	
S7002	EVQ11A04M	SWITCH,POWER	1	
■	VEP73136A	SD CARD P.C.B.		(RTL)
C6801	ECJ1VB1H103K	50V 0.01U	1	



Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
C6802	F1H1A225A051	10V 22U	1	
LB6801	J0JHC0000032	COIL	1	
LB6802	J0JHC0000045	COIL	1	
P6801	K1NA09E00075	CONNECTOR(9P)	1	
P6802	K1MY20AA0021	CONNECTOR(20P)	1	
R6801	ERJ3GEYJ101V	1/10W 100	1	
R6802	ERJ3GEYJ220V	1/10W 22	1	
R6803	ERJ3GEYJ220V	1/10W 22	1	
R6804	ERJ3GEYJ223V	1/10W 22K	1	
R6805	ERJ3GEYJ123V	1/10W 12K	1	
R6807	ERJ3GEYJ223V	1/10W 22K	1	
RX6801	EXB38V220JV	RESISTOR-RESISTOR	1	
RX6802	EXB38V123JV	RESISTOR-RESISTOR	1	
■	VEP73137A	HDMI P.C.B.		(RTL)
C56001	ECJ0EC1H221J	50V 220P	1	
C56101	ECJ0EB1A104K	10V 0.1U	1	
C56102	ECJ0EB1A104K	10V 0.1U	1	
C56103	ECJ0EB1A104K	10V 0.1U	1	
C56104	ECJ0EB1A104K	10V 0.1U	1	
C56105	ECJ0EB1A104K	10V 0.1U	1	
C56106	ECJ0EB1A104K	10V 0.1U	1	
C56107	ECJ0EB1A104K	10V 0.1U	1	
C56108	ECJ0EB1A104K	10V 0.1U	1	
C56109	ECJ0EB1A104K	10V 0.1U	1	
C56110	ECJ0EB1A104K	10V 0.1U	1	
C56111	ECJ0EB1A104K	10V 0.1U	1	
C56112	ECJ0EB1A104K	10V 0.1U	1	
C56113	ECJ0EB1A104K	10V 0.1U	1	
C56114	ECJ0EB1A104K	10V 0.1U	1	
C56115	ECJ0EB1A104K	10V 0.1U	1	
C56116	ECJ0EB1A104K	10V 0.1U	1	
C56117	ECJ0EB1A104K	10V 0.1U	1	
C56118	ECJ0EB1A104K	10V 0.1U	1	
C56119	ECJ0EB1A104K	10V 0.1U	1	
C56120	ECJ0EB1A104K	10V 0.1U	1	
C56121	ECJ0EB1A104K	10V 0.1U	1	
C56122	ECJ0EB1A104K	10V 0.1U	1	
C56123	ECJ0EB1A104K	10V 0.1U	1	
C56124	ECJ0EB1A104K	10V 0.1U	1	
C56125	ECJ0EB1A104K	10V 0.1U	1	
C56126	ECJ0EB1A104K	10V 0.1U	1	
C56127	ECJ0EB1A104K	10V 0.1U	1	
C56128	ECJ0EB1A104K	10V 0.1U	1	
C56129	ECJ0EC1H221J	50V 220P	1	
C56130	ECJ1VB0J105K	6.3V 1U	1	
C56131	F1J0J106A014	6.3V 10U	1	
C56132	ECJ0EB1C103K	16V 0.01U	1	
C56133	F1H1A105A028	10V 1U	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
C56134	F1H1A105A028	10V 1U	1	
C56135	ECJ0EB1A104K	10V 0.1U	1	
C56140	ECJ0EB1A104K	10V 0.1U	1	
D56101	MA2J72800L	DIODE	1	
FL56101	F1H0J1050025	FILTER	1	
FL56102	F1H0J1050025	FILTER	1	
FL56103	F1H0J1050025	FILTER	1	
FL56104	F1H0J1050025	FILTER	1	
FL56105	F1H0J1050025	FILTER	1	
FL56106	F1H0J1050025	FILTER	1	
FL56110	F1H0J1050025	FILTER	1	
FP56101	K1MN40AA0082	CONNECTOR(40P)	1	
IC56101	C0JBAZ002116	IC	1	
IC56102	C0JBAZ002116	IC	1	
IC56103	MN864701	IC	1	
IC56104	C0CBCBD00048	IC	1	
IC56105	C0CBCDC00052	IC	1	
IC56107	C0JBAB000604	IC	1	
L56101	J0MAB0000170	COIL	1	
L56102	J0MAB0000170	COIL	1	
L56103	J0MAB0000170	COIL	1	
L56104	J0MAB0000170	COIL	1	
LB56101	J0JHC0000032	COIL	1	
LB56102	J0JHC0000032	COIL	1	
LB56103	J0JHC0000032	COIL	1	
LB56104	J0JCC0000119	COIL	1	
LB56105	J0JCC0000119	COIL	1	
LB56106	J0JCC0000119	COIL	1	
LB56107	J0JCC0000119	COIL	1	
LB56108	J0JHC0000032	COIL	1	
LB56109	J0JHC0000032	COIL	1	
LB56110	J0JHC0000032	COIL	1	
LB56111	J0JHC0000032	COIL	1	
LB56112	J0JHC0000032	COIL	1	
LB56115	J0JHC0000032	COIL	1	
LB56116	J0JHC0000032	COIL	1	
P56101	K1KY10BA0033	CONNECTOR(10P)	1	
P56102	K1FA119E0002	CONNECTOR(119P)	1	
Q56001	2SD1819A0L	TRANSISTOR	1	
Q56002	2SD1819A0L	TRANSISTOR	1	
Q56101	2SD1819A0L	TRANSISTOR	1	
Q56102	B1CFHA000002	TRANSISTOR	1	
Q56103	B1CFHA000002	TRANSISTOR	1	
Q56104	2SD1819A0L	TRANSISTOR	1	
Q56105	2SD1819A0L	TRANSISTOR	1	

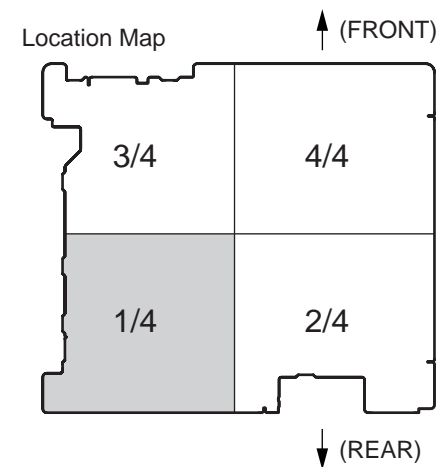
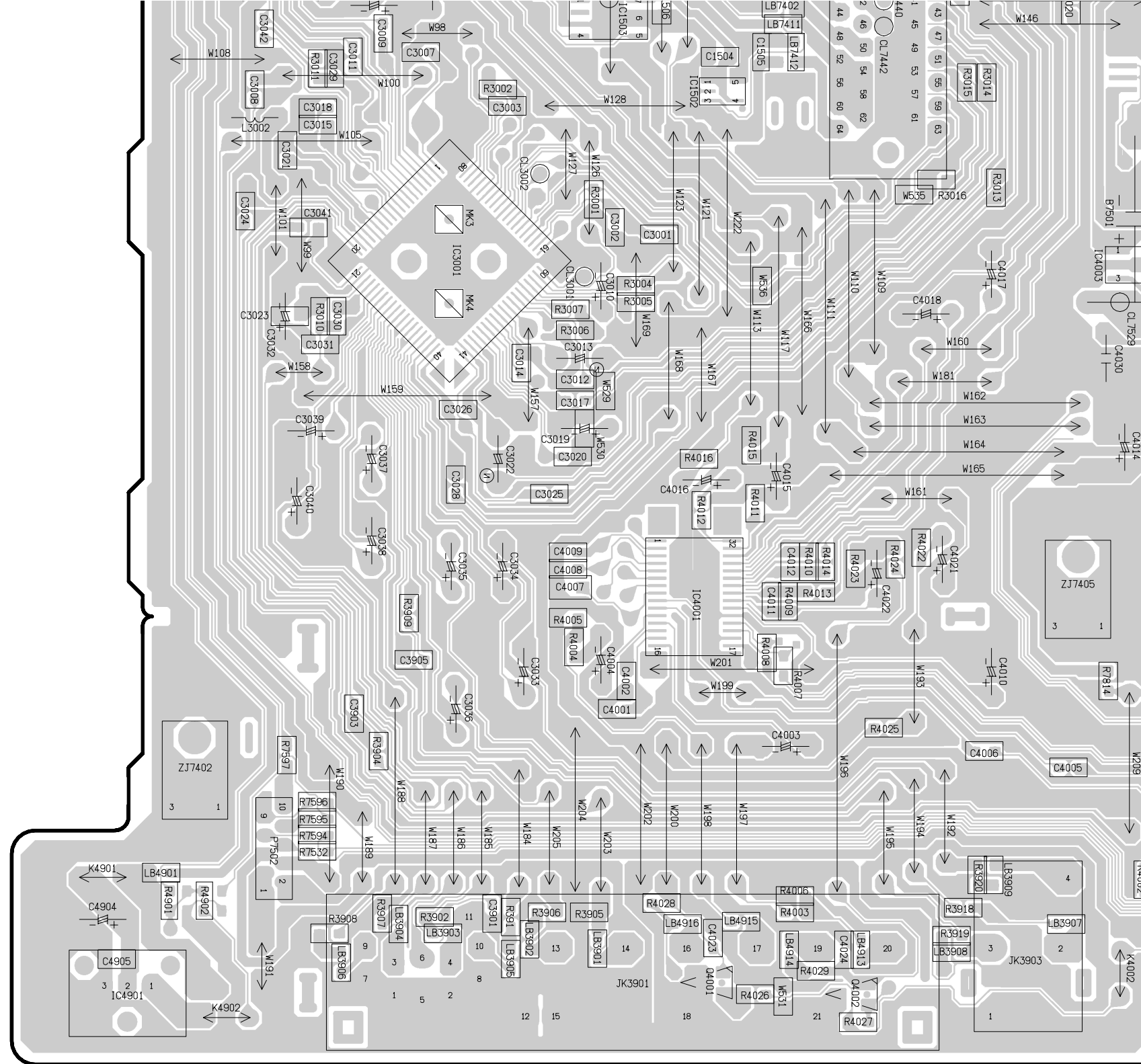
Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
R56001	ERJ2GEJ472X	1/16W 4.7K	1	
R56002	ERJ2GEJ473X	1/16W 47K	1	
R56003	ERJ2GEJ225X	1/16W 2200K	1	
R56004	ERJ2GEJ104X	1/16W 100K	1	
R56101	ERJ2GEJ220X	1/16W 22	1	
R56102	ERJ2GEJ330X	1/16W 33	1	
R56103	ERJ2GEJ330X	1/16W 33	1	
R56104	ERJ2GEJ330X	1/16W 33	1	
R56105	ERJ2GEJ330X	1/16W 33	1	
R56106	ERJ2GEJ820X	1/16W 82	1	
R56107	ERJ2GEJ330X	1/16W 33	1	
R56108	ERJ2GEJ330X	1/16W 33	1	
R56109	ERJ2GEJ121X	1/16W 120	1	
R56110	ERJ2GEJ330X	1/16W 33	1	
R56111	ERJ2GEJ330X	1/16W 33	1	
R56112	ERJ2GEJ330X	1/16W 33	1	
R56114	ERJ2GEJ330X	1/16W 33	1	
R56115	ERJ2GEJ820X	1/16W 82	1	
R56116	ERJ2GEJ101X	1/16W 100	1	
R56117	ERJ2GEJ151X	1/16W 150	1	
R56118	ERJ2GEJ820X	1/16W 82	1	
R56119	ERJ2GEJ330X	1/16W 33	1	
R56120	ERJ2GEJ151X	1/16W 150	1	
R56121	ERJ2GEJ151X	1/16W 150	1	
R56122	ERJ2GEJ151X	1/16W 150	1	
R56123	ERJ2GEJ511X	1/16W 510	1	
R56124	ERJ2GEJ103X	1/16W 10K	1	
R56125	ERJ2GEJ202X	1/16W 2K	1	
R56126	ERJ2GEJ202X	1/16W 2K	1	
R56127	ERJ2GEJ103X	1/16W 10K	1	
R56128	ERJ2GEJ202X	1/16W 2K	1	
R56129	ERJ2GEJ202X	1/16W 2K	1	
R56130	ERJ2GEJ273X	1/16W 27K	1	
R56131	ERJ2GEJ221X	1/16W 220	1	
R56132	ERJ2GEJ224X	1/16W 220K	1	
R56133	ERJ2GEJ104X	1/16W 100K	1	
R56134	ERJ2GEJ470X	1/16W 47	1	
R56135	ERJ2GEJ470X	1/16W 47	1	
R56137	ERJ2GE0R00X	1/16W 0	1	
R56138	ERJ2GE0R00X	1/16W 0	1	
R56139	ERJ2GEJ820X	1/16W 82	1	
R56140	ERJ2GEJ8R2X	1/16W 8.2	1	
R56142	ERJ2GEJ330X	1/16W 33	1	
R56143	ERJ2GEJ330X	1/16W 33	1	
R56144	ERJ2GEJ8R2X	1/16W 8.2	1	
R56145	ERJ2GEJ8R2X	1/16W 8.2	1	
R56146	ERJ2GEJ8R2X	1/16W 8.2	1	
R56147	ERJ2GEJ8R2X	1/16W 8.2	1	
R56148	ERJ2GEJ8R2X	1/16W 8.2	1	
R56149	ERJ2GEJ8R2X	1/16W 8.2	1	
R56150	ERJ2GEJ8R2X	1/16W 8.2	1	
R56151	ERJ2GEJ820X	1/16W 82	1	
R56152	ERJ2GEJ820X	1/16W 82	1	
R56153	ERJ2GEJ820X	1/16W 82	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
R56154	ERJ2GEJ820X	1/16W 82	1	
R56155	ERJ2GEJ820X	1/16W 82	1	
R56156	ERJ2GEJ820X	1/16W 82	1	
R56157	ERJ2GEJ820X	1/16W 82	1	
R56158	ERJ2GEJ152X	1/16W 1.5K	1	
R56159	ERJ2GEJ332X	1/16W 3.3K	1	
R56160	ERJ2GEJ223X	1/16W 22K	1	
R56161	ERJ2GEJ470X	1/16W 47	1	
RX56101	D1H83304A024	RESISTOR-RESISTOR	1	
RX56102	D1H83304A024	RESISTOR-RESISTOR	1	
VA56101	D4ED13900002	VARISTORS	1	
VA56102	D4ED13900002	VARISTORS	1	
VA56103	EZJ20V800AA	VERIABLE RESISTOR	1	
VA56104	D4ED13900002	VARISTORS	1	
VA56105	EZJ20V800AA	VERIABLE RESISTOR	1	
VA56106	D4ED13900002	VARISTORS	1	
VA56107	EZJ20V800AA	VERIABLE RESISTOR	1	
VA56108	D4ED13900002	VARISTORS	1	
VA56109	EZJ20V800AA	VERIABLE RESISTOR	1	
VA56110	D4ED13900002	VARISTORS	1	
VA56111	EZJ20V800AA	VERIABLE RESISTOR	1	
VA56112	D4ED13900002	VARISTORS	1	
VA56113	D4ED13900002	VARISTORS	1	
■		CASING/ACCESSORY/PACKING		
<u>1</u>	VEP70135A	FRONT(L)P.C.B.	1	(RTL)
<u>2</u>	VEP73135A	DV JACK P.C.B.	1	(RTL)
<u>3</u>	RFKB79117C	MAIN P.C.B.	1	(RTL)
<u>4</u>	VEP73136A	SD CARD P.C.B.	1	(RTL)
<u>5</u>	RGR0364B-A2	REAR PANEL	1	P 
5	RGR0364B-B2	REAR PANEL	1	PC 
6	RHD30111-3J	SCREW	15	
7	RHD30119-L	SCREW	11	
<u>8</u>	RMA1979A	DIGITAL ANGLE A	1	
<u>9</u>	VEP79136J	DIGITAL P.C.B.	1	(RTL)
<u>10</u>	RMQ1513	HEAT TRANSFER SHEET	1	
<u>11</u>	RMZ0825	SHEET	2	
<u>12</u>	RKA0144-K	FOOT RUBBER	5	
<u>13</u>	RMC0672	PLATE SPRING	1	
<u>14</u>	RMY0357	HEAT SINK	1	
<u>15</u>	VEP73137A	HDMI P.C.B.	1	(RTL)
<u>16</u>	VJF0036	NYLON RIVET	2	
17	XSN3+4FJ	SCREW	2	
<u>18</u>	RYP1312-S	FRONT PANEL ASS'Y 1	1	
<u>18-1</u>	RGK1968A-Q	FL ORNAMENT	1	
<u>18-2</u>	RGK1971A-S	REC BUTTON RING	1	
<u>18-3</u>	RYF0798C-S	PANEL DOOR ASS'Y	1	
<u>18-4</u>	RKF0751B-K	TRAY DOOR	1	
<u>18-5</u>	VMB3410	BLINDER SPRING	1	
19	RHD30113	SCREW	2	

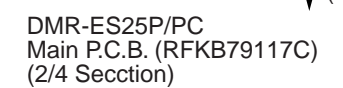
Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
<a href="#">21</a>	RKM0551-S	TOP CASE	1	⚠
<a href="#">22</a>	RMC0620-1	TUNER EARTH	1	
<a href="#">23</a>	RMC0625	TUNER END	1	
<a href="#">24</a>	VEK0K01	FFC(20P)	1	
<a href="#">25</a>	VEK0K03	FFC(40P)	1	
26	XYN3+J8FJ	SCREW	2	
<a href="#">27</a>	RMQ1566	GASKET C	3	
<a href="#">28</a>	RFKNES25P	RAM/DIGITAL P.C.B. MODULE	1	(RTL)P
28	RFKNES25PC	RAM/DIGITAL P.C.B. MODULE	1	(RTL)PC
<a href="#">29</a>	RMR1766-K	SD CARD HOLDER ASS'Y	1	
<a href="#">30</a>	RKF0754-K	SD BLINDER	1	
<a href="#">31</a>	RMB0841-1	SD LID SPRING	1	
<a href="#">32</a>	RMR1767-K	SD CHASSIS	1	
33	RHD26045	SCREW	2	
34	XTN2+8GFJ	SCREW	2	
<a href="#">35</a>	VKC0295	RIVET	2	
<a href="#">36</a>	RSC0801	SPACER	1	
<a href="#">37</a>	VJF0215	BIND BELT	1	
<a href="#">A1</a>	EUR7659Y20	REMOTE CONTROL ASS'Y	1	
<a href="#">A1-1</a>	UR76EC5903	BATTERY COVER	1	
<a href="#">A2</a>	K2CB2CB00018	AC CORD	1	⚠
<a href="#">A3</a>	K2KA6BA00003	AV CORD	1	
<a href="#">A4</a>	K2KZ2BA00001	RF COAXIAL CABLE	1	
<a href="#">A5</a>	RPQF0220-1	ACCESSORY BOX	1	
<a href="#">A6</a>	RPFC0031-B	POLYETHYLENE BAG	1	
<a href="#">A7</a>	RQT8327-1P	OPERATING INSTRUCTIONS	1	(IA) ⚠
A7	RQT8328-1C	OPERATING INSTRUCTIONS	1	(IB)PC ⚠
<a href="#">A8</a>	RQCC2825	DVD MEDIA SHEET	1	P
<a href="#">A10</a>	RQCA1475	SET-UP GUIDE	1	
A10	RQCA1476	SET-UP GUIDE	1	PC
<a href="#">PC1</a>	RPG7901-1	PACKING CASE	1	P
PC1	RPG7902	PACKING CASE	1	PC
<a href="#">PC2</a>	RPN1861A	CUSHION(A)	1	
<a href="#">PC3</a>	RPN1861B	CUSHION(B)	1	
<a href="#">PC4</a>	RPFC0026-B	POLYETHYLENE BAG	1	

## 18. Schematic Diagram for printing with A4

Main P.C.B.																		
Integrated Circuit		CL7514	E-5	D7801	B-5	LB7401	D-4	C3008	C-2	C4019	D-4	R1200	D-7	R4018	D-4	R7551	F-7	
IC1150	C-6	CL7515	E-5	Crystal Osillaror		LB7402	D-4	C3009	D-2	C4020	D-4	R1201	D-7	R4019	D-4	R7552	E-7	
IC1200	D-7	CL7516	F-5	X7502	D-5	LB7403	D-3	C3010	C-3	C4021	B-4	R1202	D-7	R4020	D-4	R7553	E-7	
IC1302	E-3	CL7517	E-5	X7503	D-5	LB7404	D-4	C3011	D-2	C4022	B-4	R1203	D-7	R4021	D-5	R7558	E-6	
IC1501	E-6	CL7518	E-5	IC Protector		LB7405	D-4	C3012	C-3	C4023	A-3	R1204	D-7	R4022	B-4	R7559	E-4	
IC1502	C-3	CL7519	E-5	IP1260	E-6	LB7406	D-4	C3013	C-3	C4024	A-4	R1206	D-7	R4023	B-4	R7562	E-4	
IC1503	D-3	CL7520	E-5	IP1270	E-7	LB7407	D-4	C3014	C-3	C4025	D-4	R1207	D-7	R4024	B-4	R7564	D-5	
IC1505	D-3	CL7521	E-5	IP1280	D-6	LB7408	D-4	C3015	C-2	C4027	D-4	R1208	D-7	R4025	B-4	R7569	D-5	
IC3001	C-3	CL7522	E-5	IP7501	E-7	LB7409	D-4	C3017	C-3	C4028	D-5	R1209	D-7	R4026	A-3	R7570	E-4	
IC4001	B-3	CL7523	E-5	IR7501	F-7	LB7410	D-4	C3018	C-2	C4029	C-5	R1301	E-3	R4027	A-4	R7572	E-4	
IC4002	D-4	CL7524	E-5	Coil		LB7411	D-4	C3019	C-3	C4030	C-4	R1302	E-3	R4028	A-3	R7573	D-5	
IC4003	C-4	CL7525	E-5	L1120	B-6	LB7412	D-4	C3020	B-3	C4904	A-2	R1303	E-3	R4029	A-4	R7574	F-5	
IC4901	A-2	CL7526	E-5	L1121	B-6	LB7501	F-7	C3021	C-2	C4905	A-2	R3001	C-3	R4901	A-2	R7575	F-5	
IC7401	D-3	CL7527	E-6	L1260	D-7	LB7503	E-7	C3022	B-3	C7403	D-3	R3002	C-3	R4902	A-2	R7584	F-7	
IC7501	E-5	CL7528	D-6	L1270	D-7	LB7504	E-7	C3023	C-2	C7504	E-5	R3004	C-3	R7401	D-3	R7585	F-5	
IC7512	D-5	CL7529	C-4	L1280	D-6	LB7801	B-5	C3024	C-2	C7505	E-5	R3005	C-3	R7402	D-3	R7586	F-6	
IC7514	E-6	TL7401	D-3	L1301	E-4	LB7802	B-5	C3025	B-3	C7506	E-4	R3006	C-3	R7403	D-3	R7587	F-6	
Transistor		TL7501	E-5	L1402	E-3	LB7803	A-5	C3026	C-3	C7507	E-5	R3007	C-3	R7404	D-3	R7590	D-6	
Q1200	D-7	TL7502	C-5	L3001	D-3	Capasitor		C3027	D-2	C7508	D-5	R3010	C-2	R7406	D-3	R7591	D-5	
Q4001	A-3	TL7503	C-5	L3002	C-2	C1101	B-7	C3028	B-3	C7509	D-5	R3011	C-2	R7501	D-5	R7592	E-5	
Q4002	A-4	TL7504	E-5	L7401	D-3	C1121	B-6	C3029	C-2	C7512	D-5	R3012	D-4	R7502	D-5	R7593	F-5	
Q7401	D-3	TL7506	C-5	L7501	F-7	C1122	B-6	C3030	C-2	C7513	D-5	R3013	C-4	R7504	D-5	R7594	A-2	
Q7402	D-3	TL7507	C-5	L7502	C-5	C1123	B-6	C3031	C-2	C7514	E-6	R3014	C-4	R7505	D-5	R7595	A-2	
Q7502	E-7	TL7801	B-5	LB1122	C-6	C1125	C-6	C3032	C-2	C7516	D-6	R3015	C-4	R7506	D-5	R7596	A-2	
Q7503	E-7	TL7802	A-5	LB1123	C-6	C1143	C-6	C3033	B-3	C7519	E-3	R3016	C-4	R7507	E-5	R7597	A-2	
Q7504	D-4	TW7501	C-5	LB1150	C-7	C1150	C-7	C3034	B-3	C7520	D-5	R3902	A-3	R7508	E-5	R7598	F-7	
Q7510	E-4	Connector		LB1260	D-7	C1151	C-6	C3035	B-3	C7521	D-5	R3904	B-2	R7509	E-4	R7599	E-6	
Q7511	D-5	JK3901	A-3	LB1261	D-7	C1152	C-7	C3036	B-3	C7522	F-7	R3905	A-3	R7510	D-5	R7600	F-5	
Q7513	D-5	JK3903	A-4	LB1270	D-6	C1153	C-7	C3037	B-2	C7523	E-5	R3906	A-3	R7511	F-4	R7601	F-4	
Q7514	E-4	JK3905	F-3	LB1271	D-7	C1154	C-7	C3038	B-2	C7524	E-7	R3907	A-2	R7513	E-4	R7603	F-5	
Q7801	B-5	P1101	A-7	LB1280	D-6	C1200	D-7	C3039	B-2	C7527	F-7	R3908	A-2	R7514	D-5	R7604	F-6	
Transistor-resistor		P7401	D-4	LB1281	E-3	C1201	D-7	C3040	B-2	C7530	F-6	R3909	B-3	R7515	D-5	R7605	F-6	
QR4001	D-5	P7502	A-2	LB3901	A-3	C1202	D-7	C3041	C-2	C7531	F-7	R391	A-3	R7516	D-5	R7801	A-5	
QR4002	D-5	P7505	F-2	LB3902	A-3	C1260	D-7	C3042	D-2	C7532	E-7	R3918	A-4	R7517	D-5	R7802	A-5	
QR4003	D-5	Diode		LB3903	A-3	C1261	E-7	C3901	A-3	C7533	E-7	R3919	A-4	R7518	D-5	R7812	B-5	
QR7503	E-4	D1120	C-6	LB3904	A-3	C1270	D-7	C3903	B-2	C7538	C-5	R3920	A-4	R7519	D-5	R7814	B-4	
Test Point		D1150	C-7	LB3905	A-3	C1271	E-7	C3905	B-3	C7561	C-5	R3926	F-2	R7520	D-5	R7815	B-5	
CL3001	C-3	D1151	C-7	LB3906	A-2	C1280	D-6	C3907	F-2	C7801	A-5	R3927	F-2	R7522	E-4	R7816	B-5	
CL3002	C-3	D1152	C-7	LB3907	A-4	C1281	E-3	C3908	F-2	C7802	C-5	R3928	F-3	R7523	D-4	Switch		
CL7401	D-4	D1153	C-7	LB3908	A-4	C1300	E-3	C4001	B-3	C7823	B-5	R3929	F-3	R7524	E-4	S7501	F-7	
CL7402	D-4	D1260	D-7	LB3909	A-4	C1301	E-3	C4002	B-3	C7824	B-5	R4001	B-5	R7525	D-4	S7502	F-7	
CL7428	D-4	D1270	D-6	LB3913	F-2	C1303	E-3	C4003	B-4	C7825	B-5	R4002	A-4	R7526	E-4	S7503	F-6	
CL7440	D-4	D1280	D-6	LB3914	F-3	C1305	E-3	C4004	B-3	C7826	B-5	R4003	A-4	R7527	E-4	S7505	F-5	
CL7442	D-4	D1281	E-3	LB3915	F-3	C1501	E-6	C4005	B-4	C7827	B-5	R4004	B-3	R7528	E-4	S7506	F-4	
CL7501	D-5	D1500	E-3	LB3917	E-2	C1502	E-6	C4006	B-4	C7828	B-5	R4005	B-3	R7530	C-5	S7507	F-5	
CL7502	E-5	D1501	E-3	LB3918	E-2	C1504	D-3	C4007	B-3	C7829	B-5	R4006	A-4	R7531	C-5	Transformer		
CL7503	E-5	D1502	E-3	LB3919	E-2	C1505	D-3	C4008	B-3	C7830	B-5	R4007	B-4	R7532	A-2	T1150	D-7	
CL7504	E-5	D4001	D-4	LB3920	E-2	C1506	D-3	C4009	B-3	Resistor		R4008	B-3	R7533	E-5	T7501	F-7	
CL7505	D-5	D7401	D-3	LB4901	A-2	C1507	D-3	C4010	B-4	R1120	C-6	R4009	B-4	R7534	D-4	Tuner		
CL7506	F-5	D7502	E-7	LB4902	E-3	C1509	E-3	C4011	B-3	R1150	C-7	R4010	B-4	R7535	E-4	TU7801	B-5	
CL7507	F-6	D7504	E-7	LB4903	E-3	C1510	D-3	C4012	B-4	R1151	C-7	R4011	B-3	R7540	E-3	Varistor		
CL7508	C-5	D7506	F-7	LB4911	F-3	C1511	D-3	C4013	C-5	R1152	C-7	R4012	B-3	R7541	C-5	VA1101	B-7	
CL7509	E-5	D7507	E-7	LB4912	F-3	C1516	D-3	C4014	B-4	R1153	C-7	R4013	B-4	R7545	E-7	Battery		
CL7510	E-5	D7508	E-7	LB4913	A-4	C3001	C-3	C4015	B-4	R1154	C-7	R4014	B-4	R7546	F-7	B7501	C-4	
CL7511	E-5	D7510	C-5	LB4914	A-4	C3002	C-3	C4016	B-3	R1155	C-7	R4015	B-3	R7548	F-7	Display		
CL7512	E-5	D7511	E-7	LB4915	A-3	C3003	C-3	C4017	C-4	R1156	C-7	R4016	B-3	R7549	F-7	DP7501	F-5	
CL7513	E-5	D7512	E-7	LB4916	A-3	C3007	D-3	C4018	C-4	R1157	C-7	R4017	D-4	R7550	F-7			

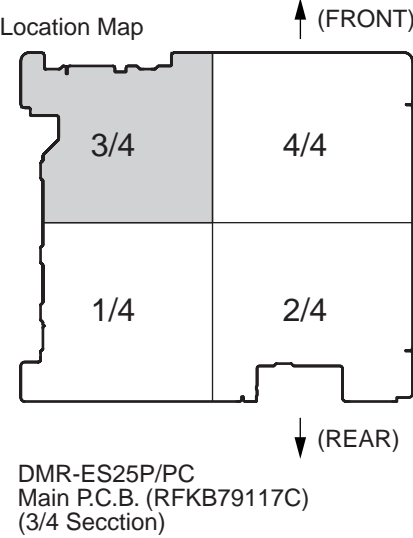
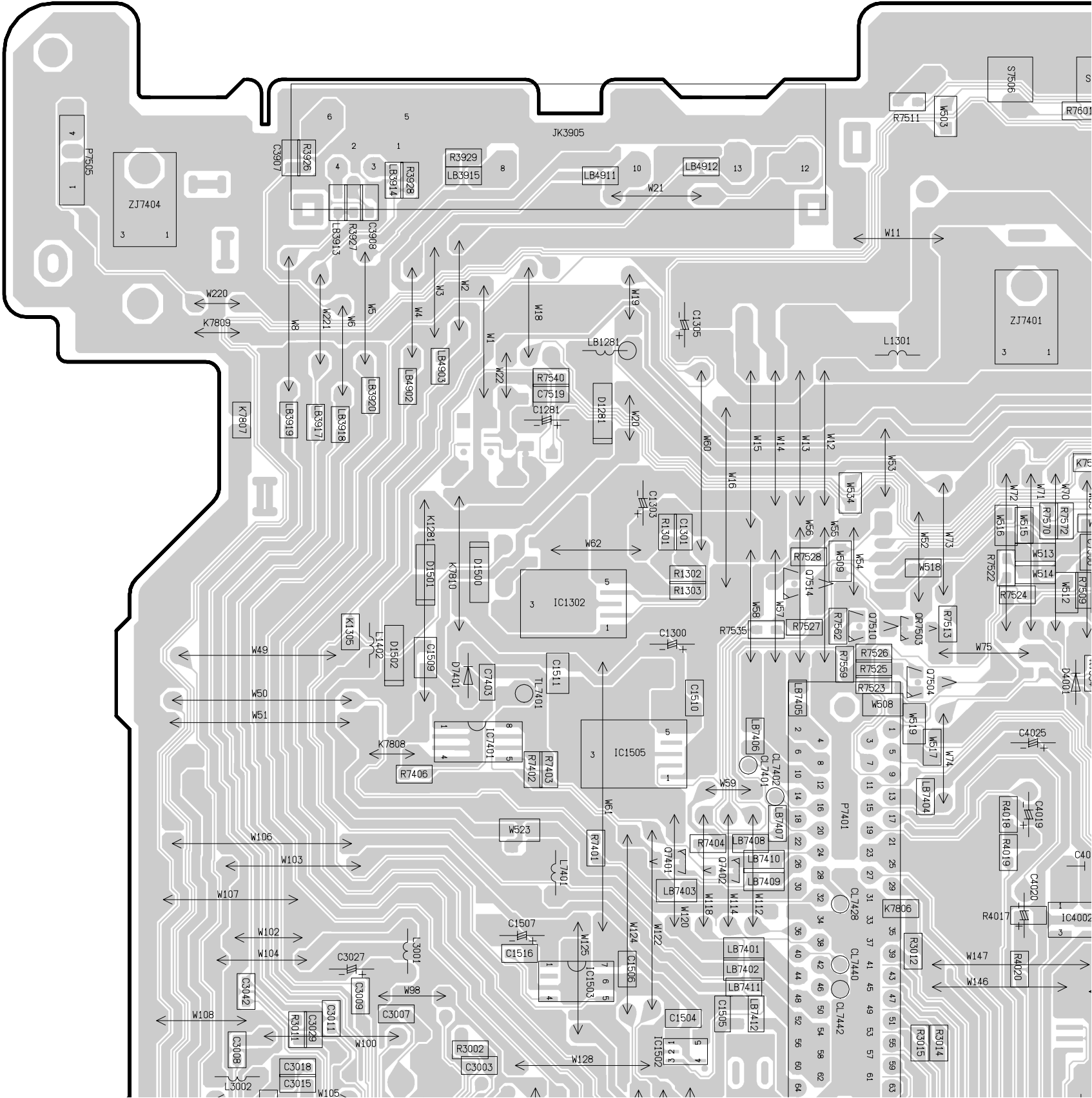


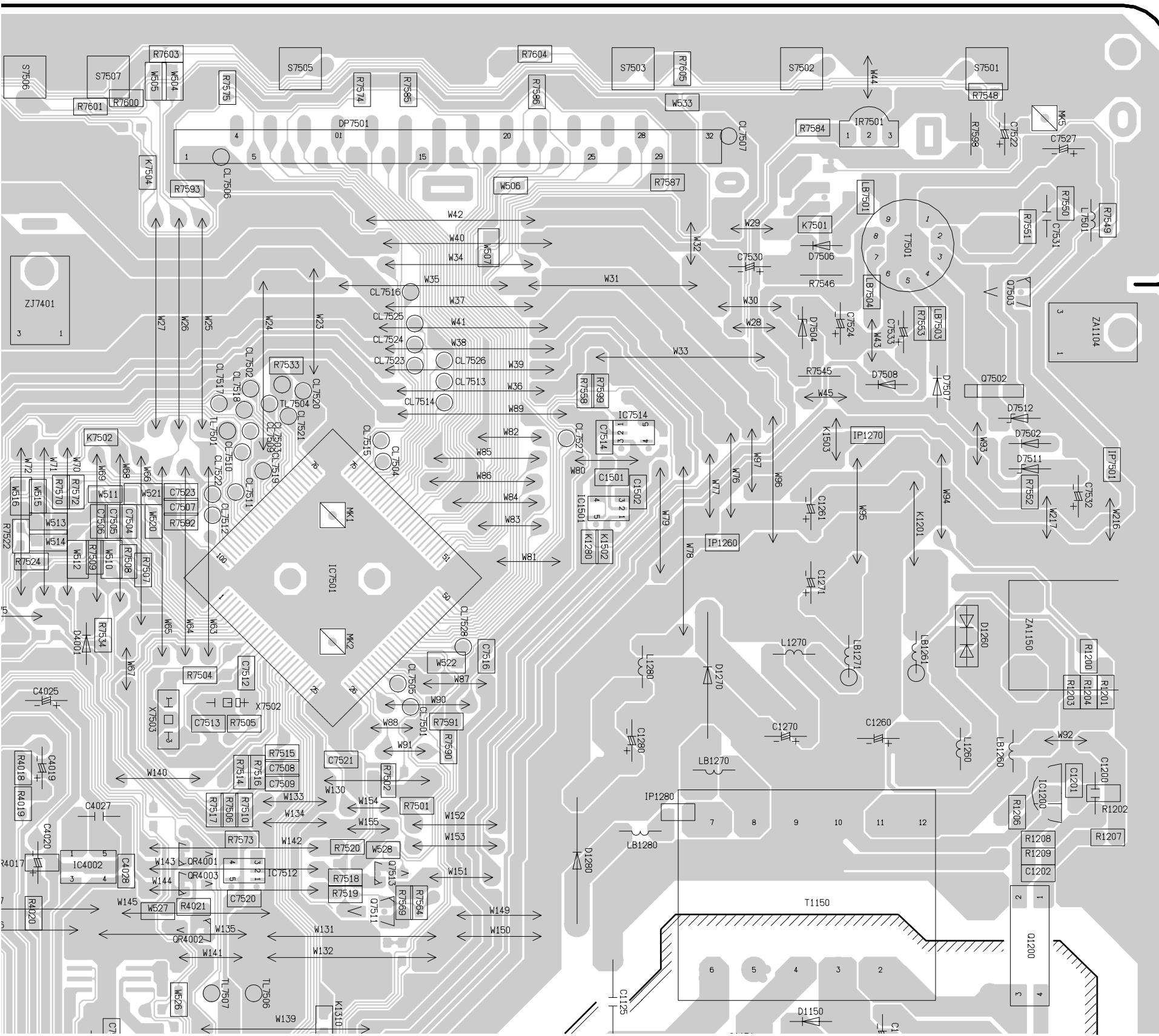
DMR-ES25P/PC  
Main P.C.B. (RFKB79117C)  
(1/4 Secction)



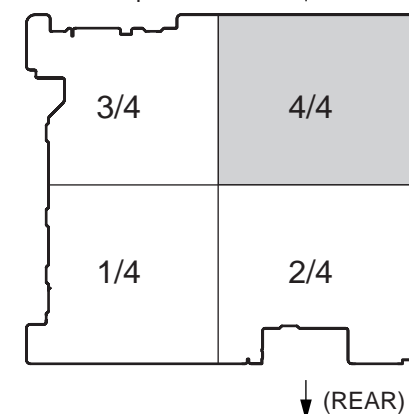


Main P.C.B.

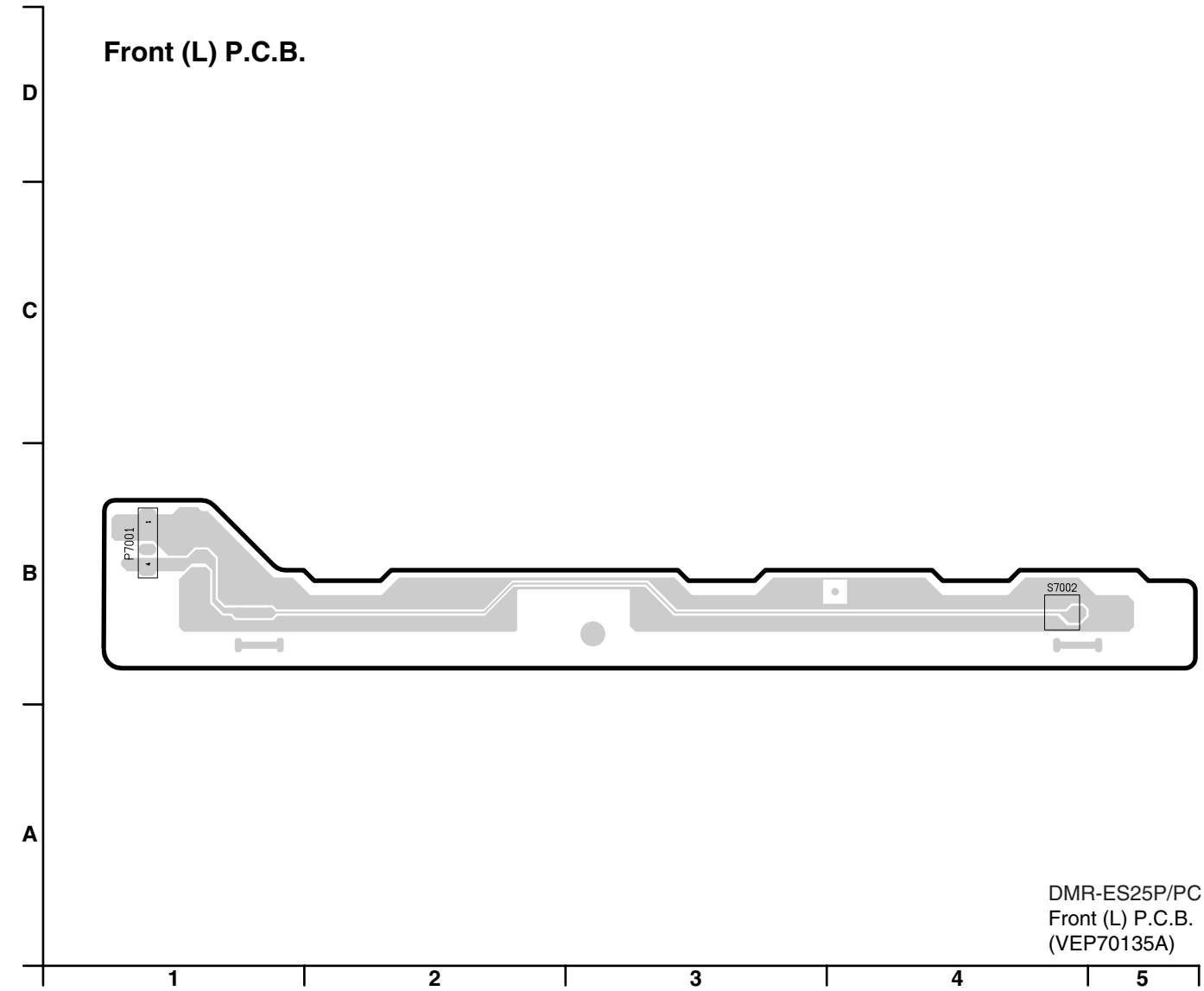
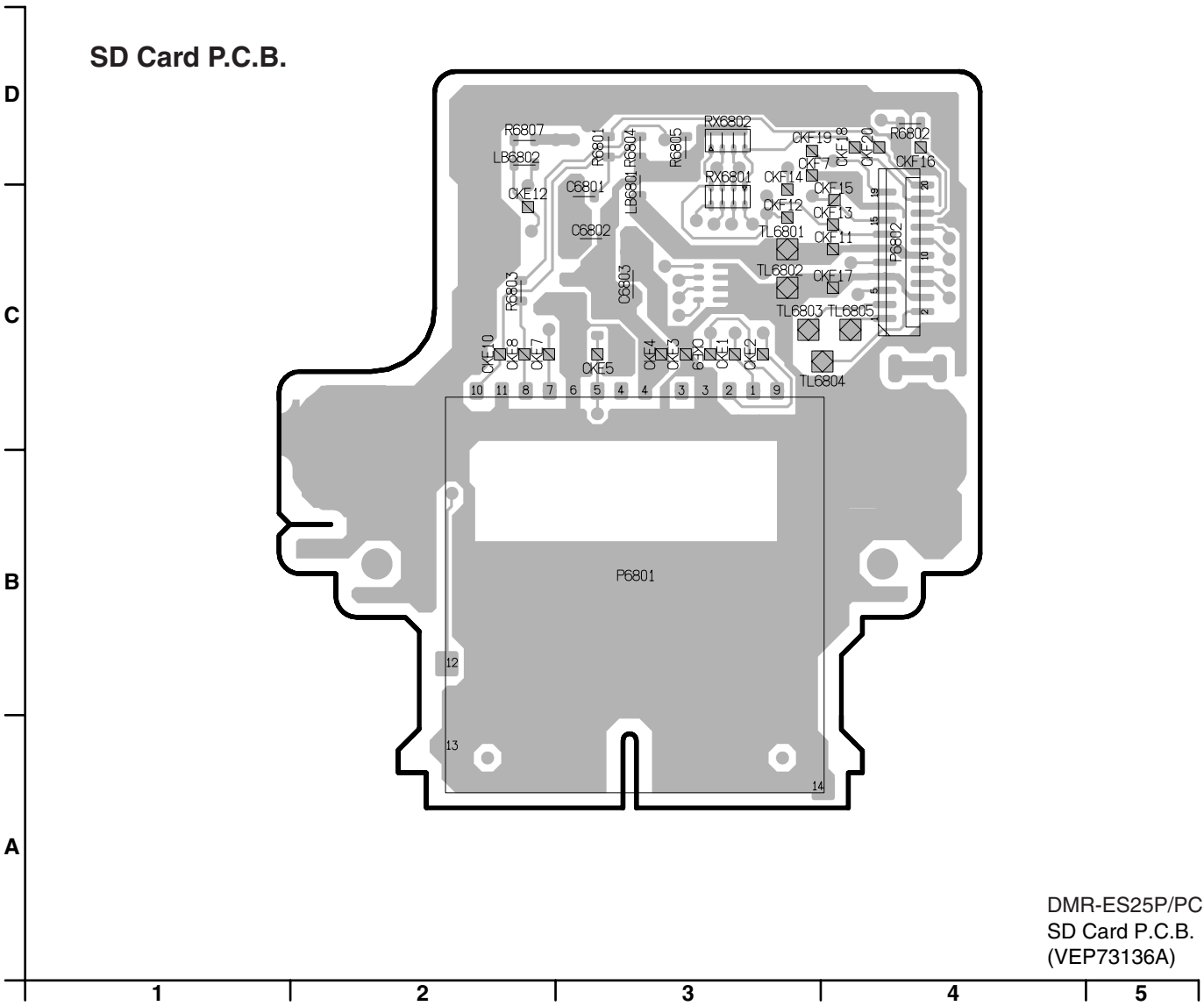




Location Map



DMR-ES25P/PC  
Main P.C.B. (RFKB79117C)  
(4/4 Section)

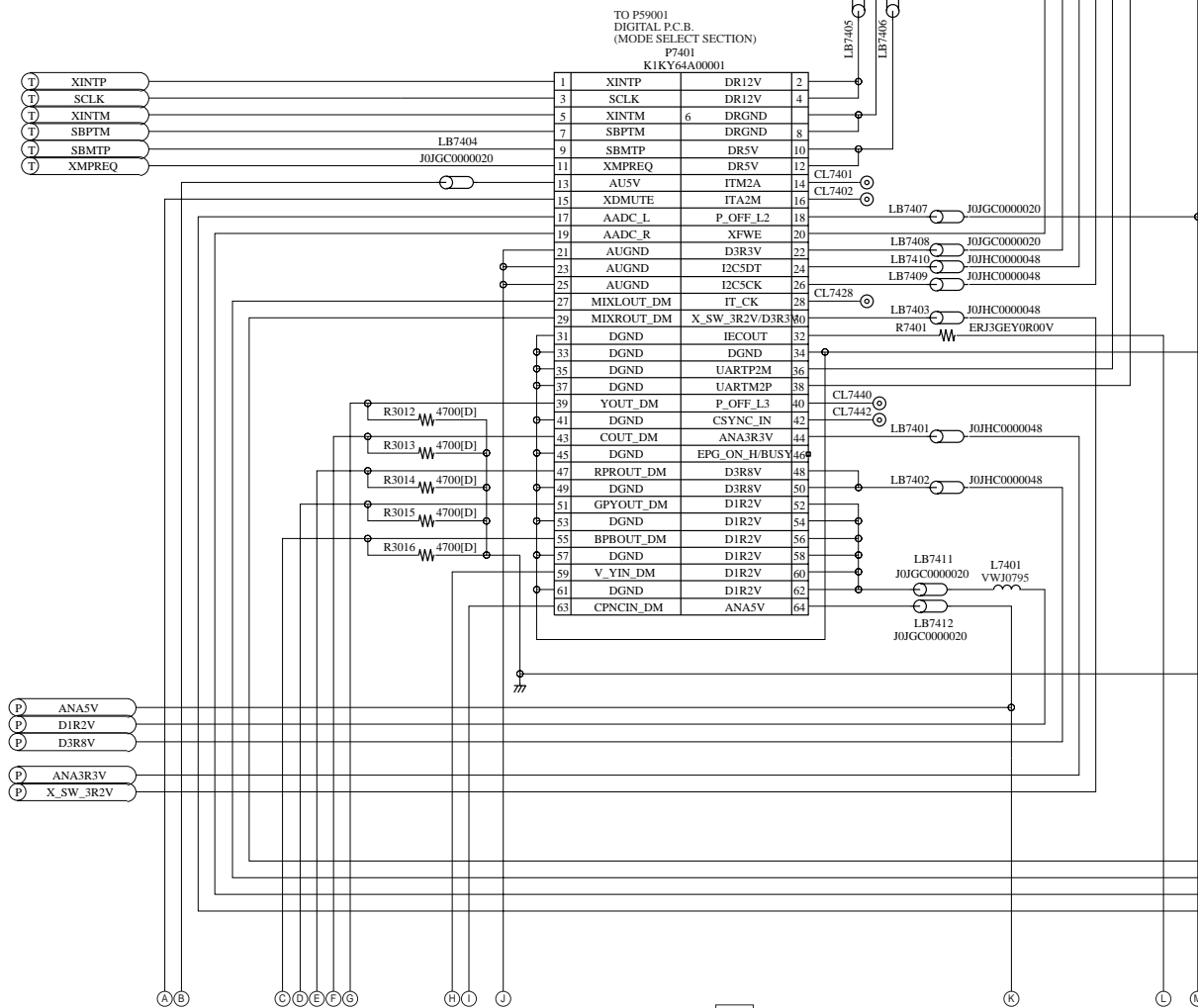


LOCATION MAP

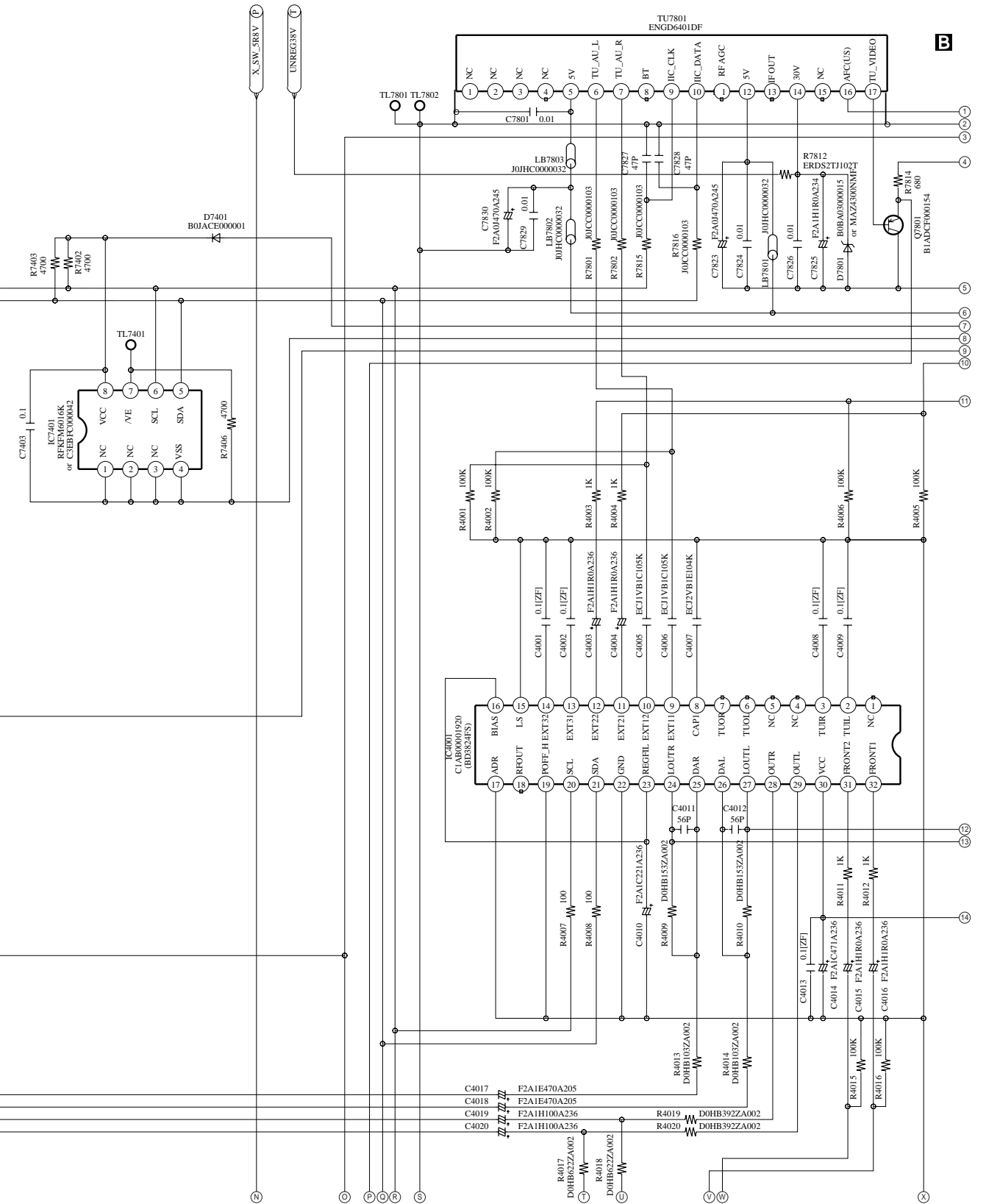
1/4	2/4
3/4	4/4

NOTE:DO NOT USE THE PART NUMBER SHOWN ON THIS DRAWING FOR ORDERING.  
THE CORRECT PART NUMBER IS SHOWN IN THE PARTS LIST,AND MAY BE  
SLIGHTLYDIFFERNT OR AMENDED SINCE THIS DRAWING WAS PREPARED.

P:Power Supply Section:(Page: **A**)  
A:A/V I/O Section:(Page: **B**)  
FL:Timer Section:(Page: **C**)



TO  
A/V I/O SECTION  
(3/4)



LOCATION MAP			
1/4	2/4		
3/4	4/4		

B

P:Power Supply Section:(Page: A)  
A:A/V I/O Section:(Page: B)  
FL:Timer Section:(Page: C)

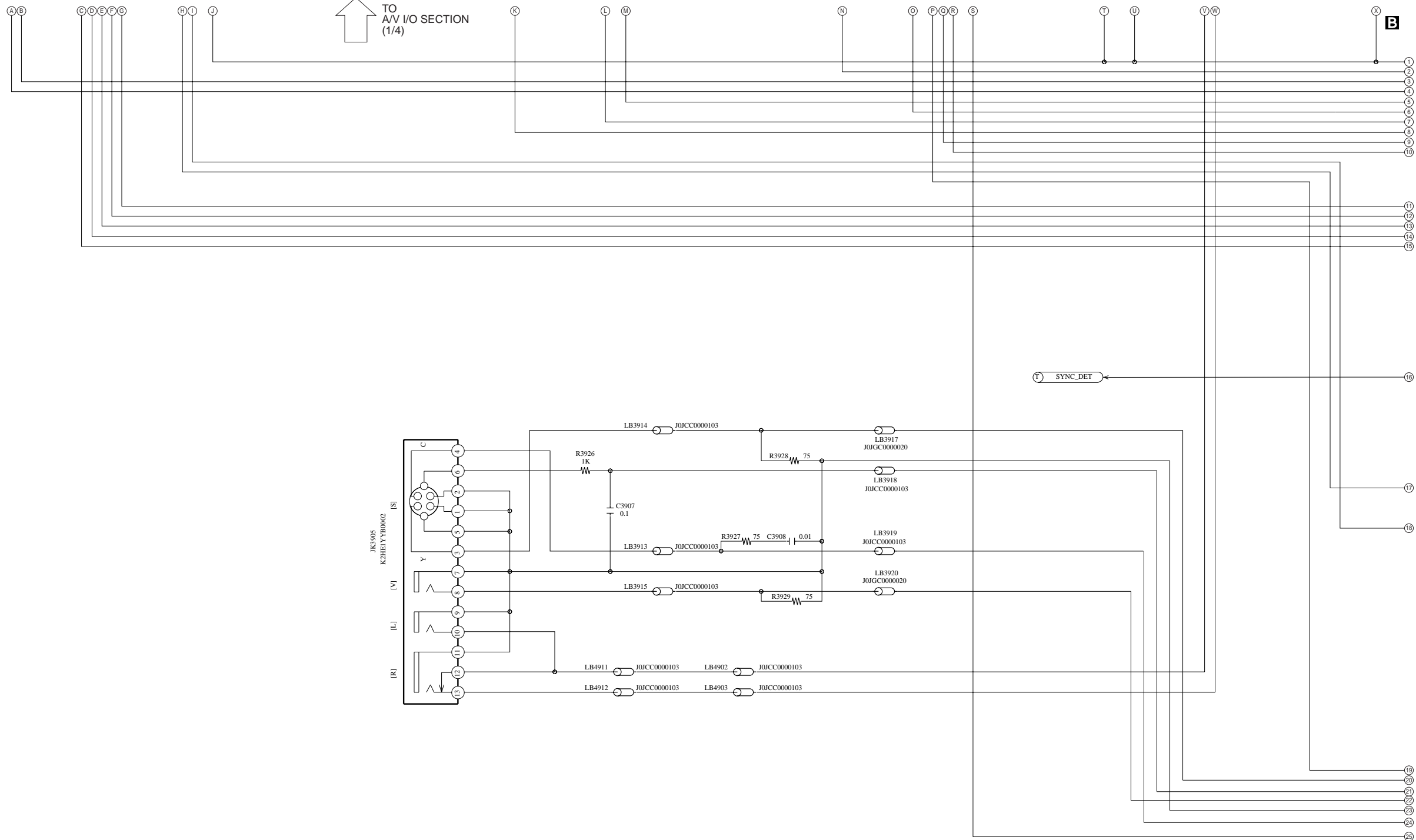
NOTE:DO NOT USE THE PART NUMBER SHOWN ON THIS DRAWING FOR ORDERING.  
THE CORRECT PART NUMBER IS SHOWN IN THE PARTS LIST,AND MAY BE  
SLIGHTLYDIFFERNT OR AMENDED SINCE THIS DRAWING WAS PREPARED.

C

B

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12345



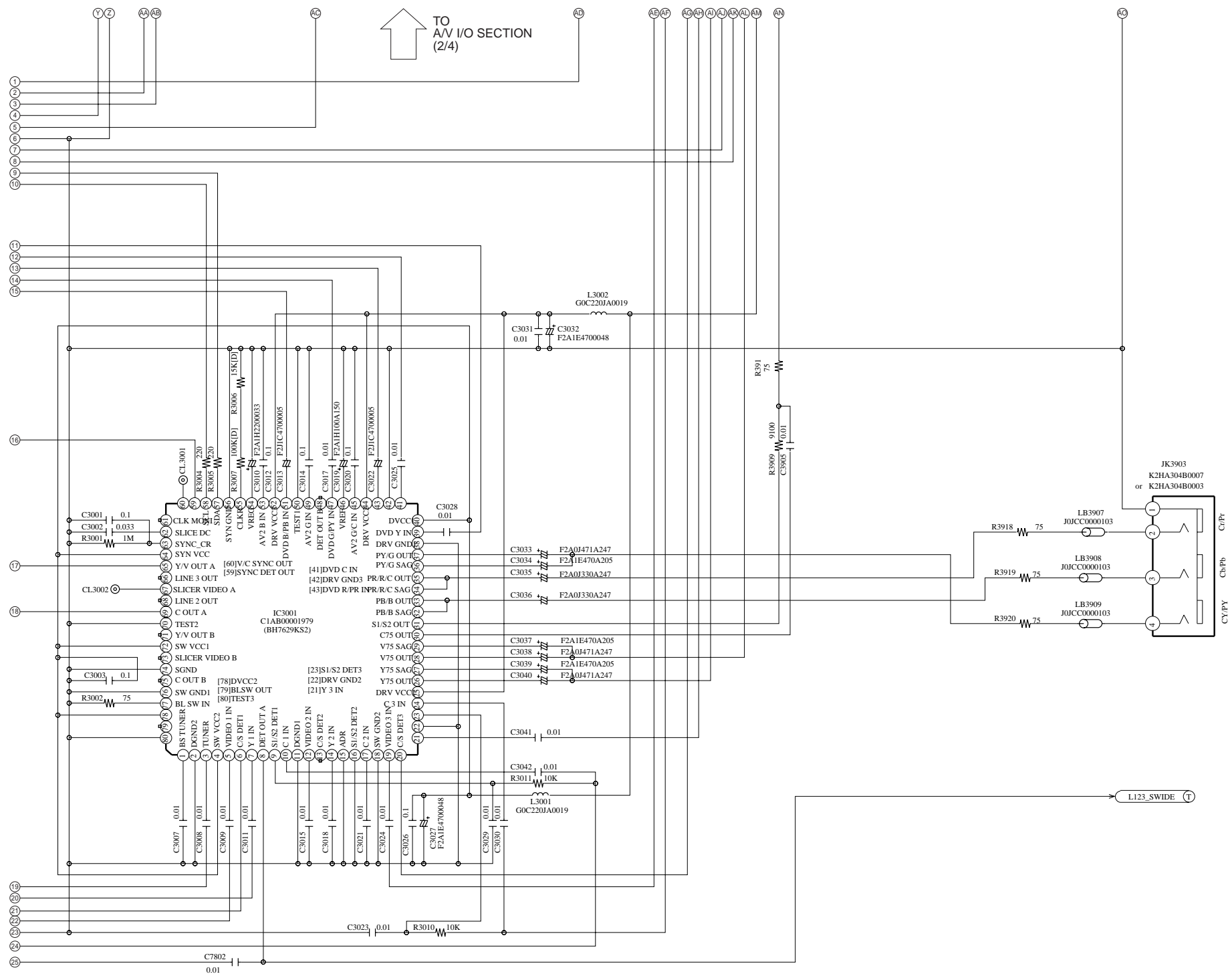
LOCATION MAP

1/4	2/4
3/4	4/4

P:Power Supply Section:(Page: **A**)  
A:A/V I/O Section:(Page: **B**)  
FL:Timer Section:(Page: **C**)

NOTE:DO NOT USE THE PART NUMBER SHOWN ON THIS DRAWING FOR ORDERING.  
THE CORRECT PART NUMBER IS SHOWN IN THE PARTS LIST,AND MAY BE  
SLIGHTLYDIFFERNT OR AMENDED SINCE THIS DRAWING WAS PREPARED.

DMR-ES25P/PC  
A/V I/O(3/4) Section  
(Main P.C.B.(2/3))  
Schematic Diagram(A)



LOCATION MAP	
1/4	2/4
3/4	4/4

NOTE: DO NOT USE THE PART NUMBER SHOWN ON THIS DRAWING FOR ORDERING.  
THE CORRECT PART NUMBER IS SHOWN IN THE PARTS LIST AND MAY BE  
SLIGHTLY DIFFERENT OR AMENDED SINCE THIS DRAWING WAS PREPARED.

P: Power Supply Section: (Page: **A**)  
A: A/V I/O Section: (Page: **B**)  
FL: Timer Section: (Page: **C**)

DMR-ES25P/PC  
A/V I/O (4/4) Section  
(Main P.C.B. (2/3))  
Schematic Diagram (A)

TO PS57001  
DIGITAL P.C.B.  
(BE (2/4) SECTION)  
P37001  
K1KA06B00181  
(IMSA-9850B-06Z900)

TPA+	1
TPA-	2
NC	3
NC	4
TPB+	5
TPB-	6

TO DV JACK  
P37002  
K2HZ104B0012  
(IMSA-9390S-04Z901)

1	TPA+
2	TPA-
3	TPB+
4	TPB-

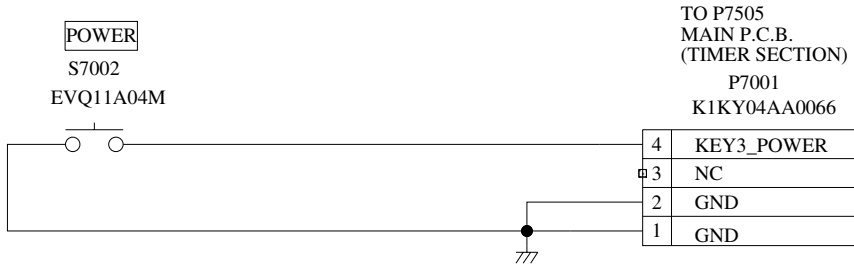
NOTE: DO NOT USE THE PART NUMBER SHOWN ON THIS DRAWING FOR ORDERING.  
THE CORRECT PART NUMBER IS SHOWN IN THE PARTS LIST, AND MAY BE  
SLIGHTLY DIFFERENT OR AMENDED SINCE THIS DRAWING WAS PREPARED.

DMR-ES25P/PC  
DV Jack Schematic Diagram



B

A



NOTE: DO NOT USE THE PART NUMBER SHOWN ON THIS DRAWING FOR ORDERING.  
THE CORRECT PART NUMBER IS SHOWN IN THE PARTS LIST, AND MAY BE  
SLIGHTLY DIFFERENT OR AMENDED SINCE THIS DRAWING WAS PREPARED.

DMR-ES25P/PC  
Front(L) Schematic Diagram

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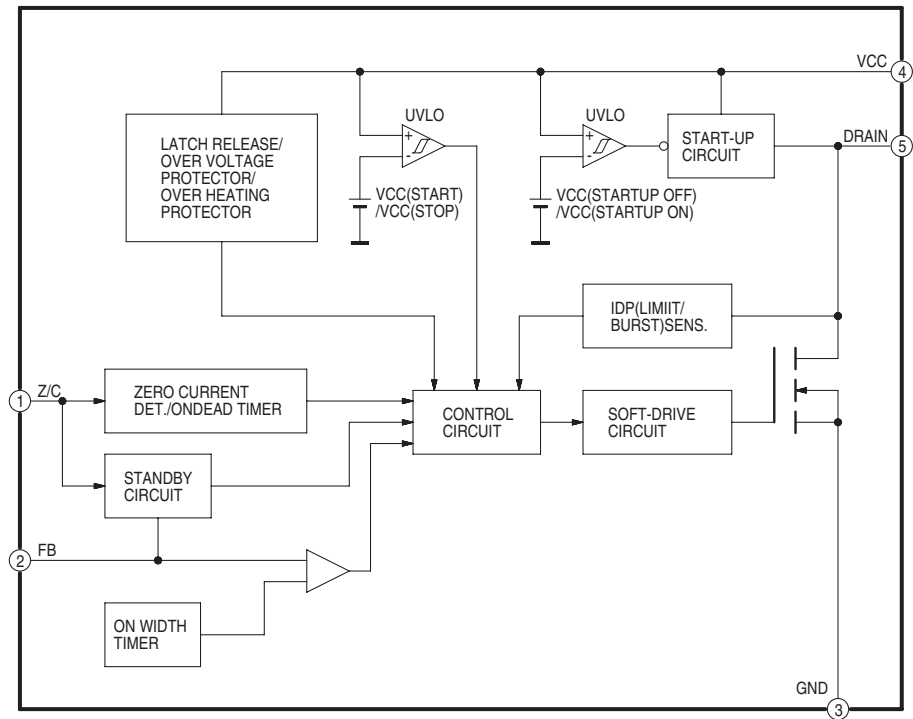
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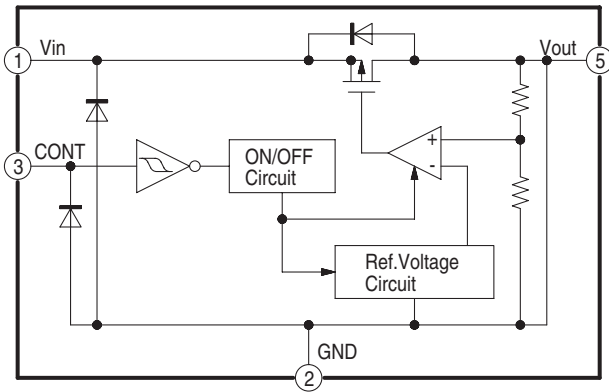
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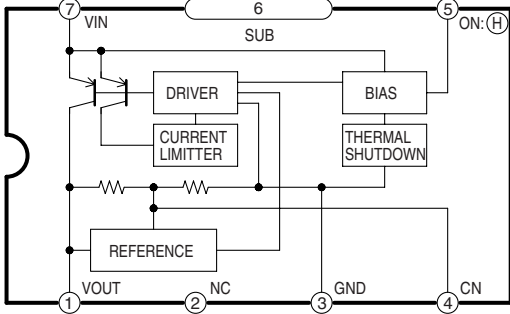
IC1150  
SWITCHING IC  
IC-DETAIL BLOCK DIAGRAM



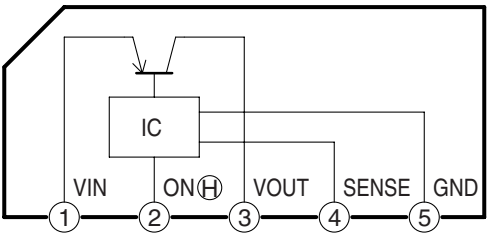
IC1501  
XSW +5.2V SWITCHING REGULATOR  
IC-DETAIL BLOCK DIAGRAM



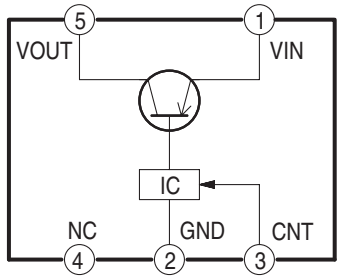
IC1503  
JC +5V SWITCHING REGULATOR  
IC-DETAIL BLOCK DIAGRAM



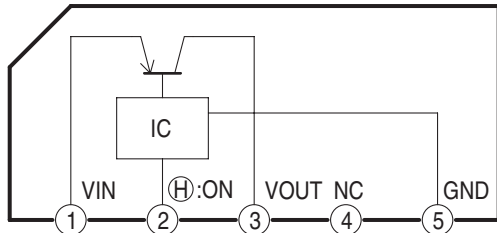
IC1302  
DR +5V SWITCHING REGULATOR  
IC-DETAIL BLOCK DIAGRAM



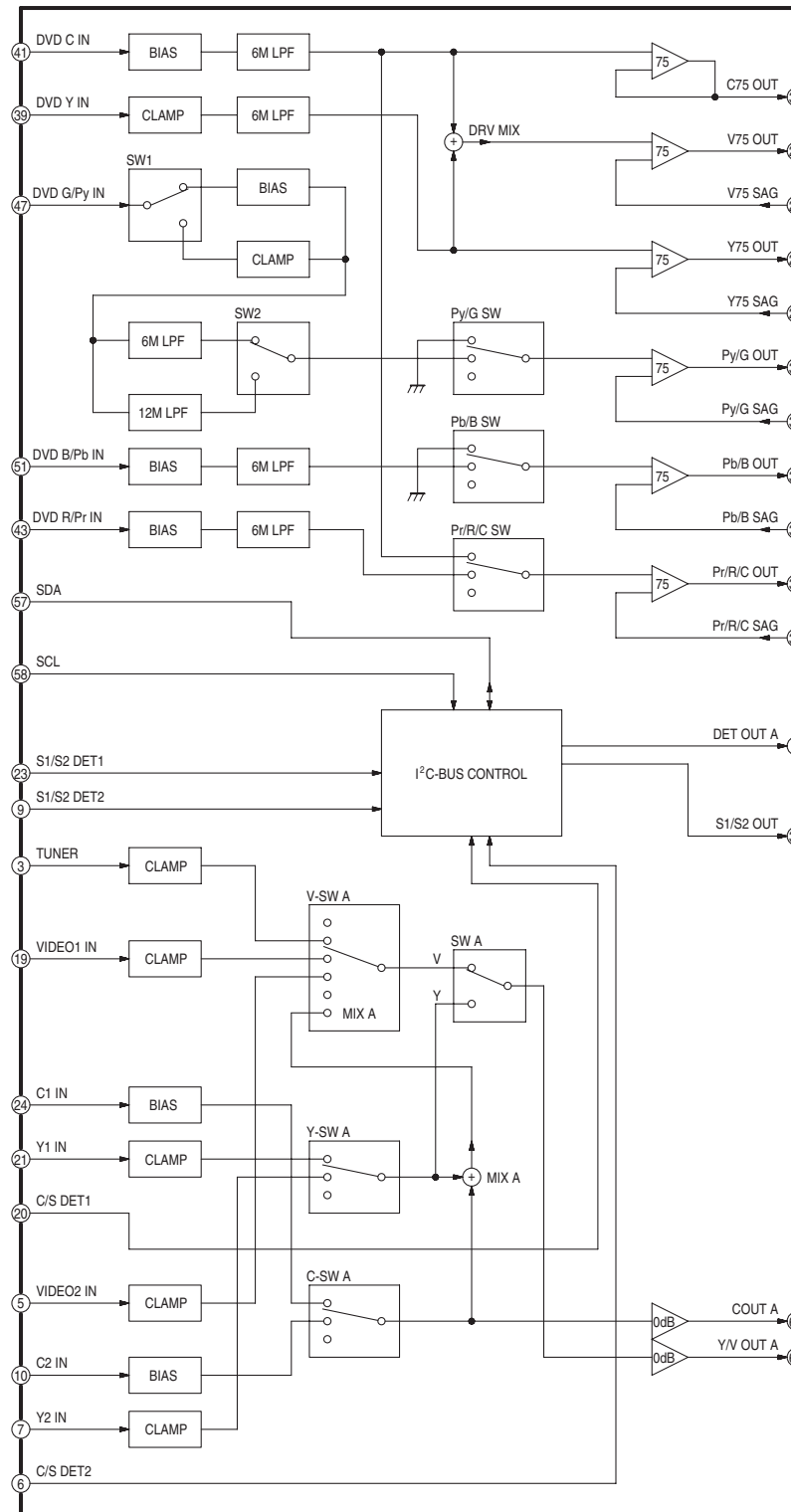
IC1502  
ANA +5V SWITCHING REGULATOR  
IC-DETAIL BLOCK DIAGRAM



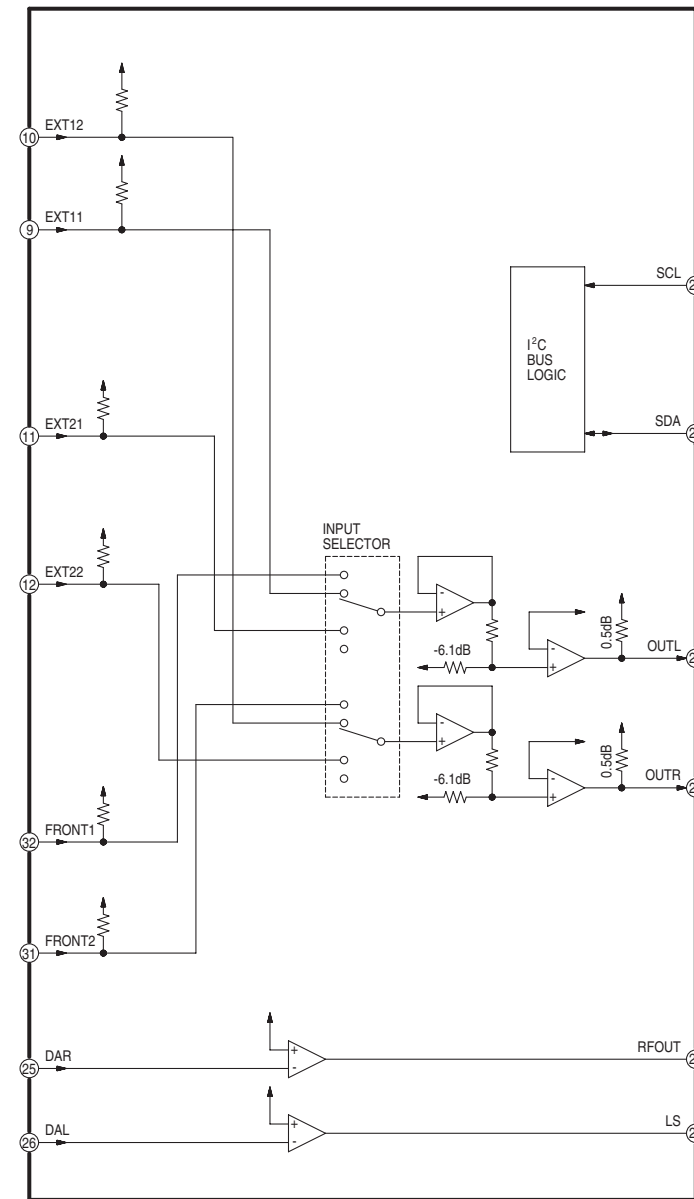
IC1505  
ANA +3.3V SWITCHING REGULATOR  
IC-DETAIL BLOCK DIAGRAM



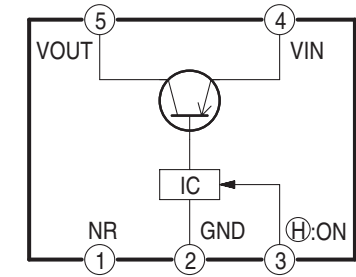
**IC3001  
VIDEO PROCESSOR  
IC-DETAIL BLOCK DIAGRAM**



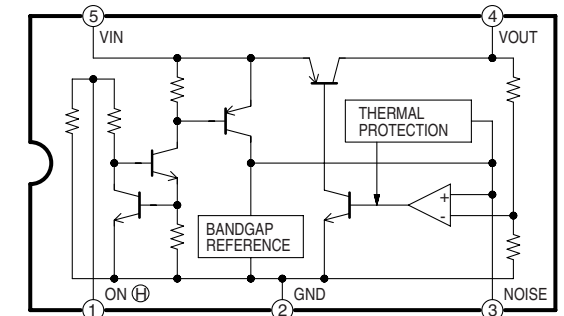
**IC4001  
AUDIO PROCESSOR  
IC-DETAIL BLOCK DIAGRAM**



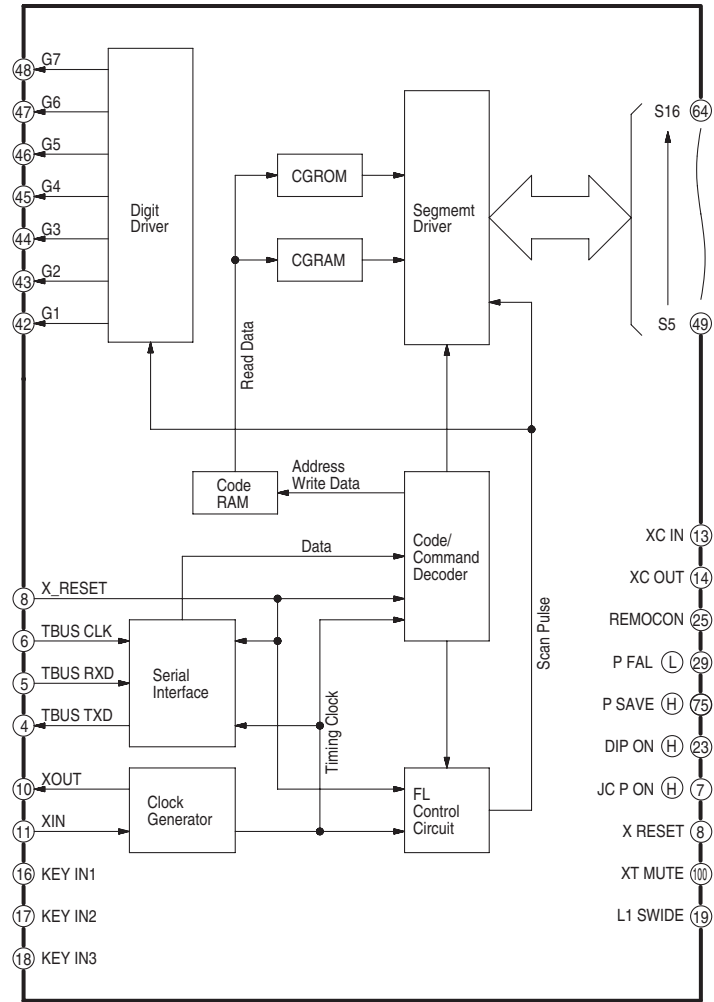
**IC4002  
AU +5V SWITCHING REGULATOR  
IC-DETAIL BLOCK DIAGRAM**



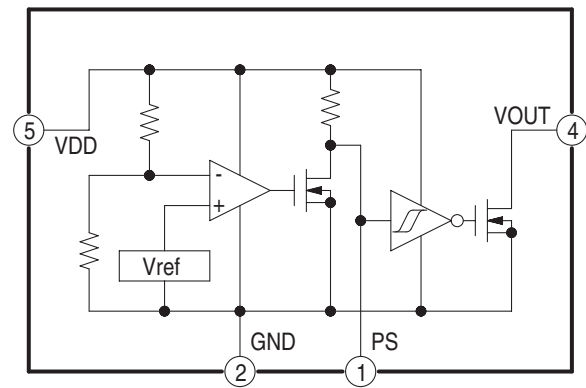
**IC4003  
AU +9V SWITCHING REGULATOR  
IC-DETAIL BLOCK DIAGRAM**



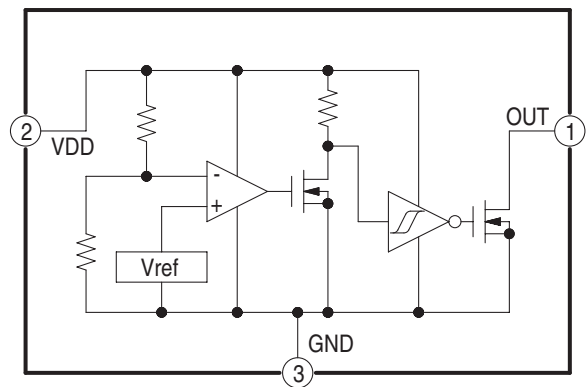
IC7501  
TIMER  
IC-DETAIL BLOCK DIAGRAM



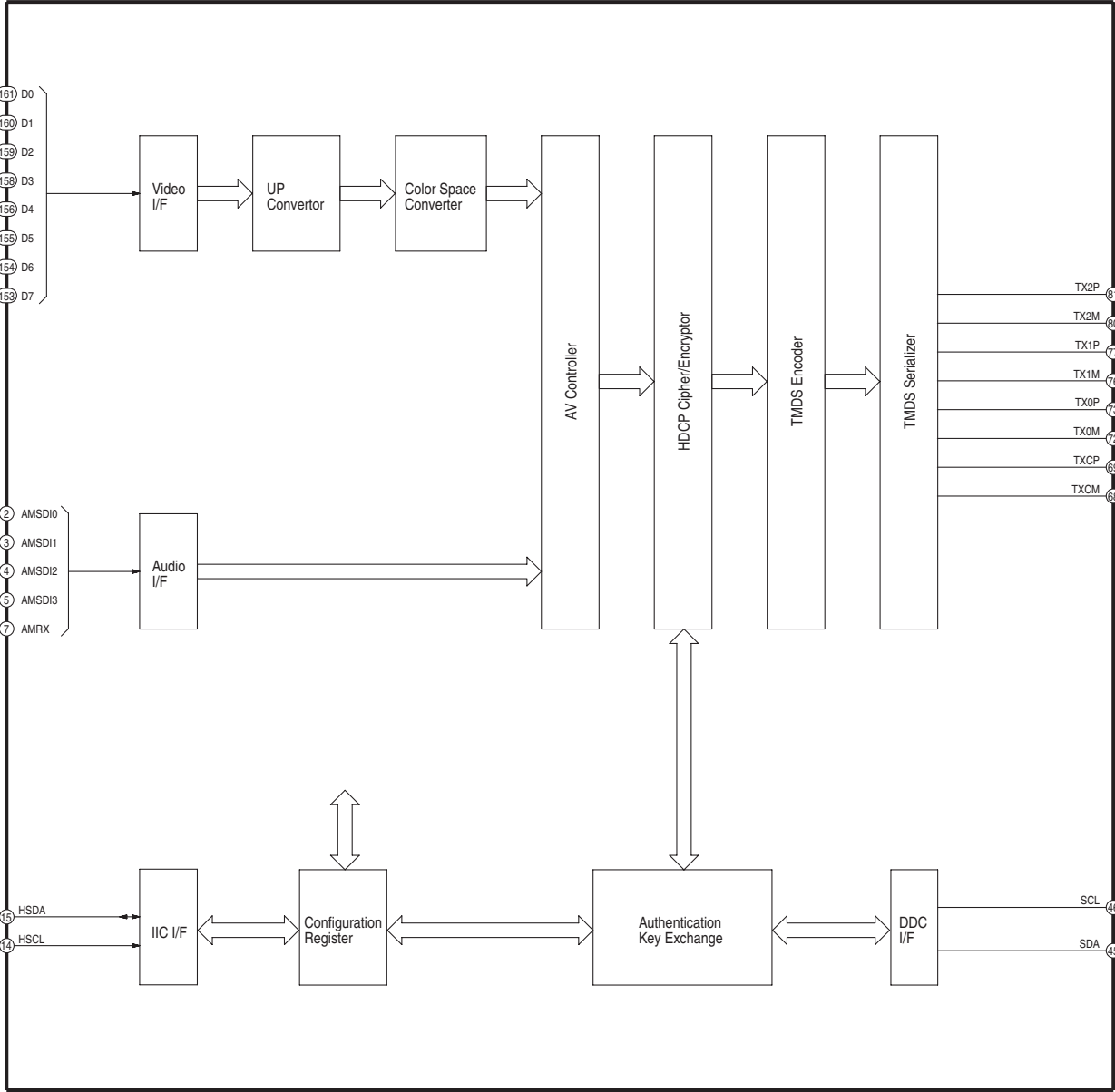
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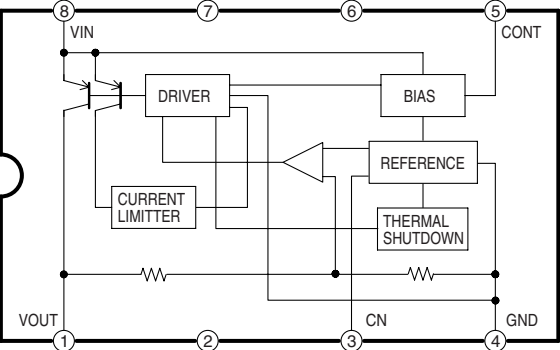
IC7514  
RESET  
IC-DETAIL BLOCK DIAGRAM



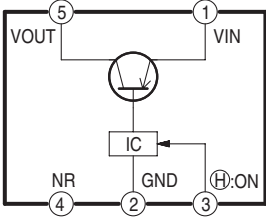
IC56103  
HDMI TRANSMITTER  
IC-DETAIL BLOCK DIAGRAM



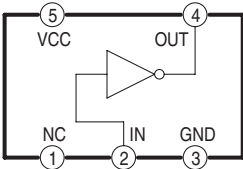
IC56104  
+3.3V SWITCHING REG.  
IC-DETAIL BLOCK DIAGRAM



IC56105  
+5V SWITCHING REG.  
IC-DETAIL BLOCK DIAGRAM



IC56107  
INVERTER  
IC-DETAIL BLOCK DIAGRAM



G

F

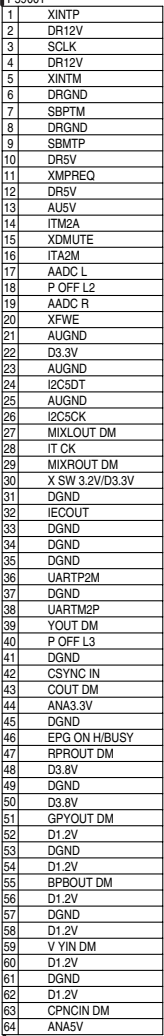
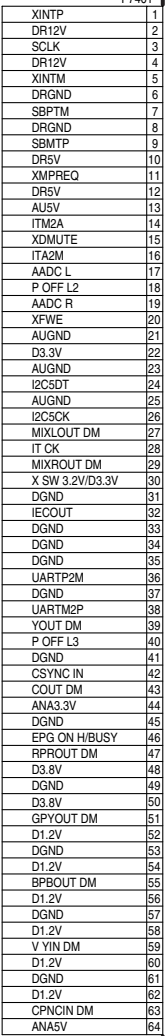
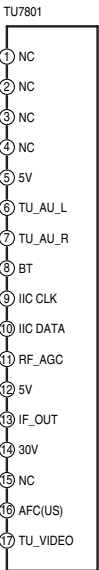
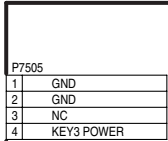
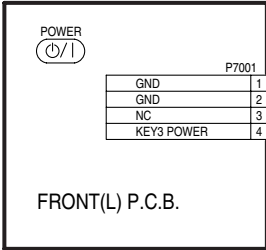
E

D

C

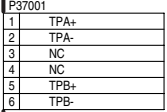
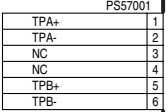
B

A

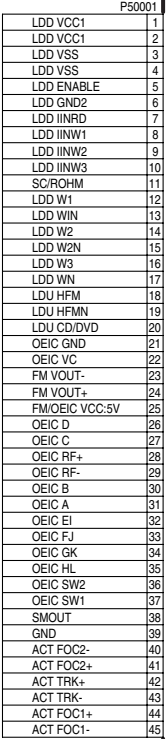


DIGITAL P.C.B.

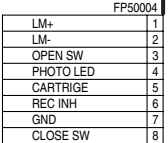
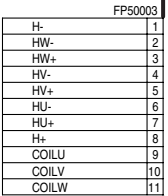
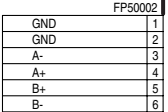
P.C.B.Name	Circuit Name	Ref.No.
Digital P.C.B.	FEP	Ref.No.50000 SERIES
	BE	Ref.No.50000,53000,54000,55000,57000 SERIES
	Audio I/O	Ref.No.54000 SERIES
	D Net	Ref.No.59000 SERIES
	Model Select	Ref.No.59000 SERIES



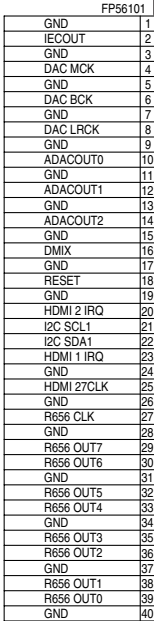
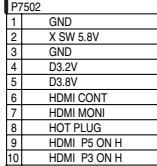
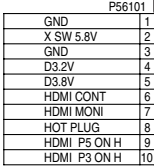
DV JACK P.C.B.



DVD RAM DRIVE



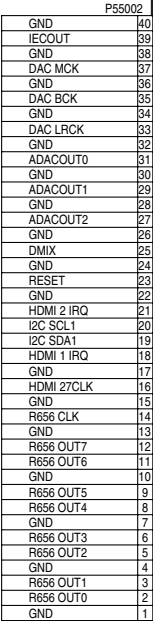
DMR-ES25P/PC  
Interconnection  
Schematic Diagram



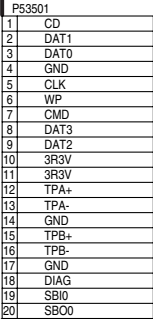
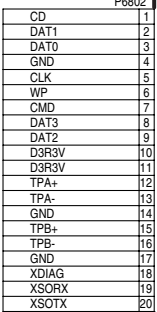
HDMI P.C.B.

MAIN P.C.B.

P.C.B.Name	Circuit Name	Ref.No.
Main P.C.B.	Power Supply	Ref.No.1100,1200,1300,1500 SERIES
	A/V I/O	Ref.No.3000,3900,4000,4900,7400,7800 SERIES
	Timer	Ref.No.7500 SERIES



SD CARD P.C.B.







F

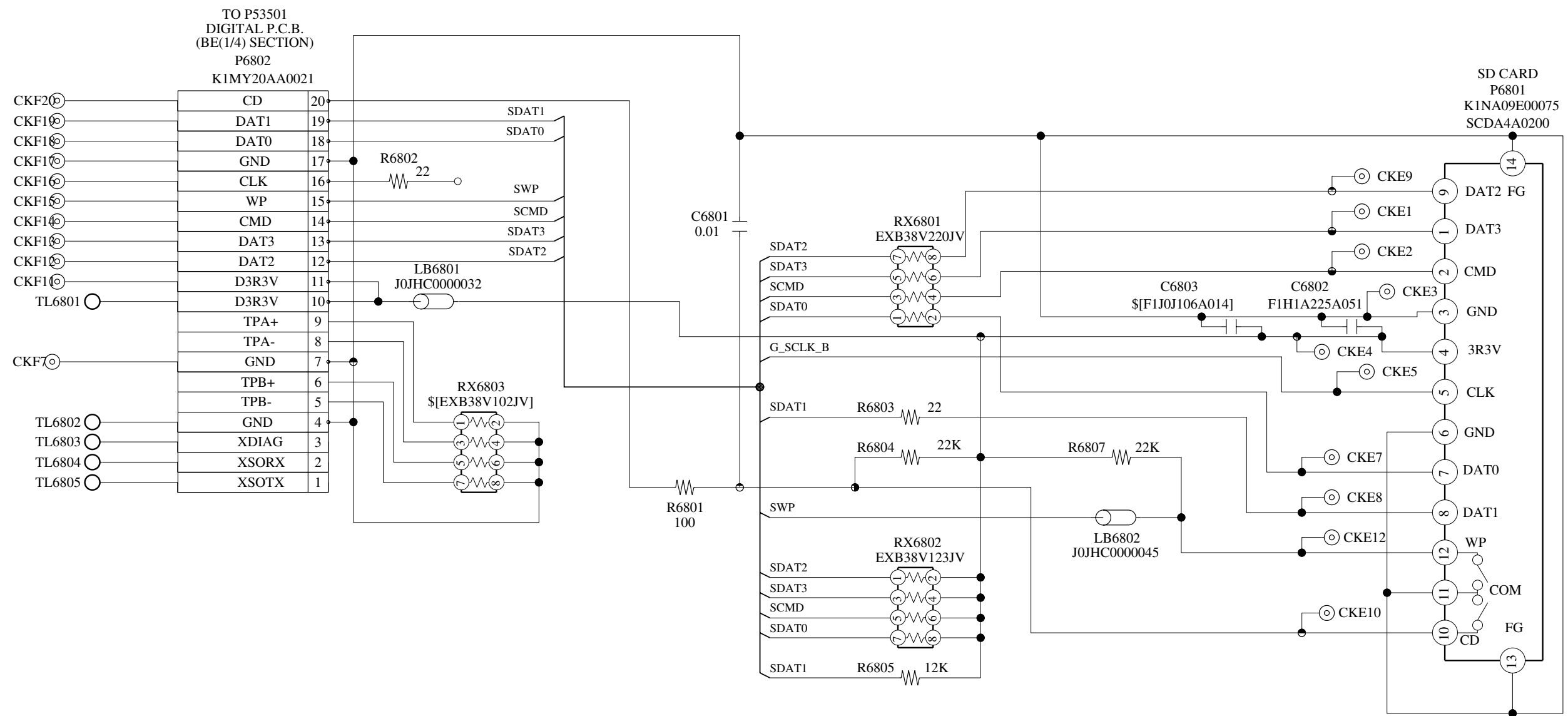
E

D

C

B

A

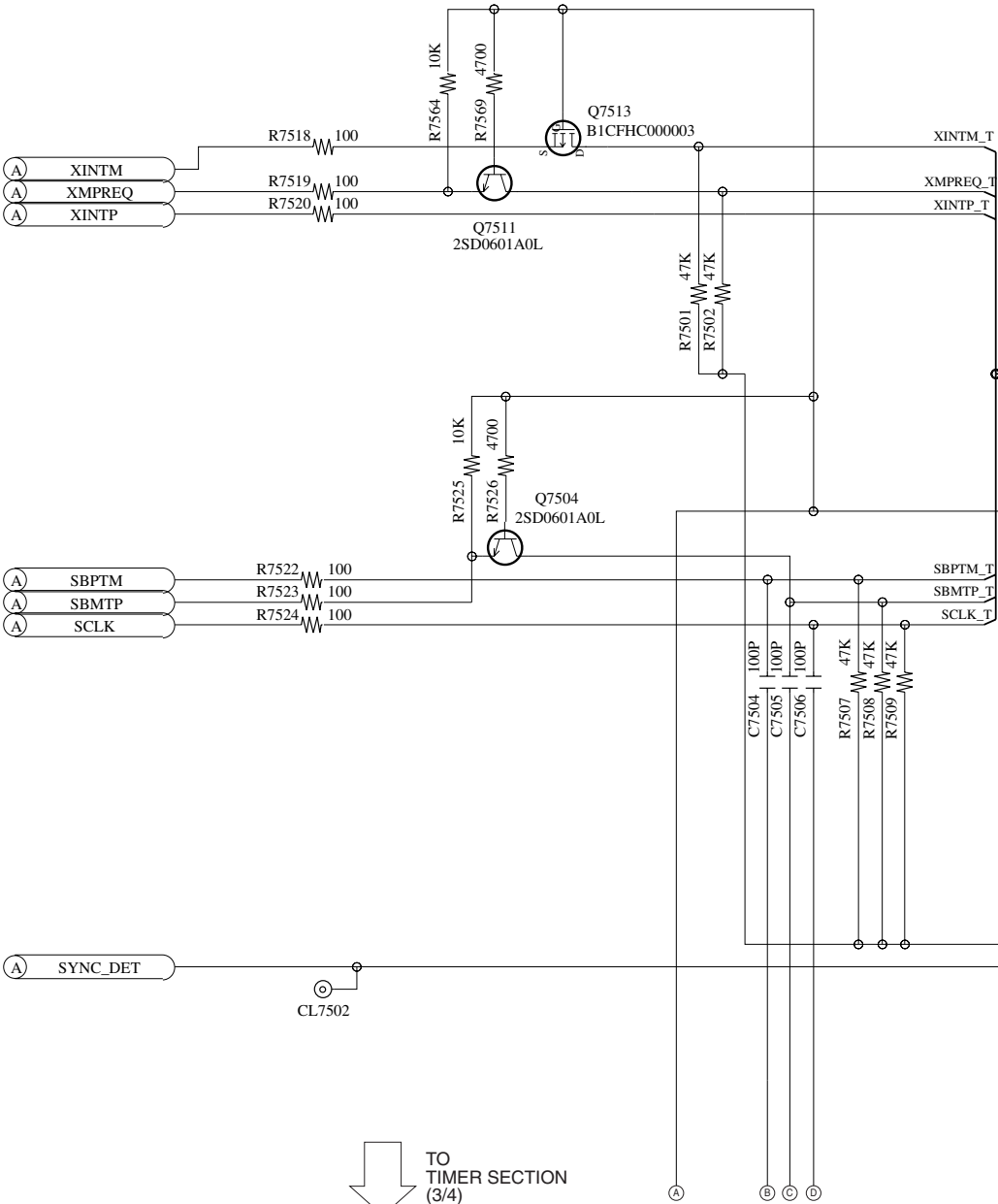


NOTE:DO NOT USE THE PART NUMBER SHOWN ON THIS DRAWING FOR ORDERING.  
THE CORRECT PART NUMBER IS SHOWN IN THE PARTS LIST,AND MAY BE  
SLIGHTLY DIFFERNT OR AMENDED SINCE THIS DRAWING WAS PREPARED.

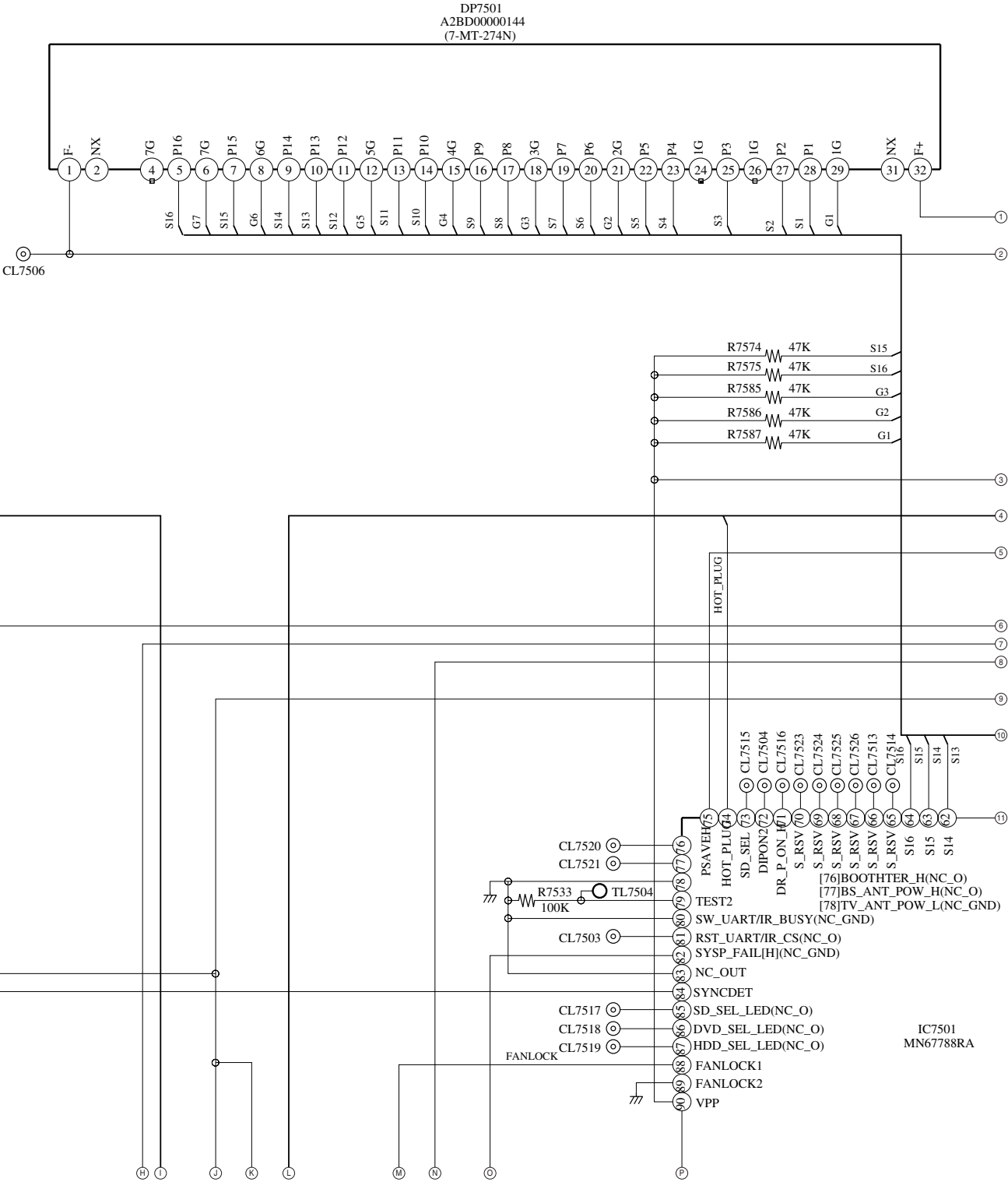
LOCATION MAP	
1/4	2/4
3/4	4/4

P:Power Supply Section:(Page: **A**)  
A:A/V I/O Section:(Page: **B**)  
FL:Timer Section:(Page: **C**)

NOTE:DO NOT USE THE PART NUMBER SHOWN ON THIS DRAWING FOR ORDERING.  
THE CORRECT PART NUMBER IS SHOWN IN THE PARTS LIST AND MAY BE  
SLIGHTLYDIFFERNT OR AMENDED SINCE THIS DRAWING WAS PREPARED.

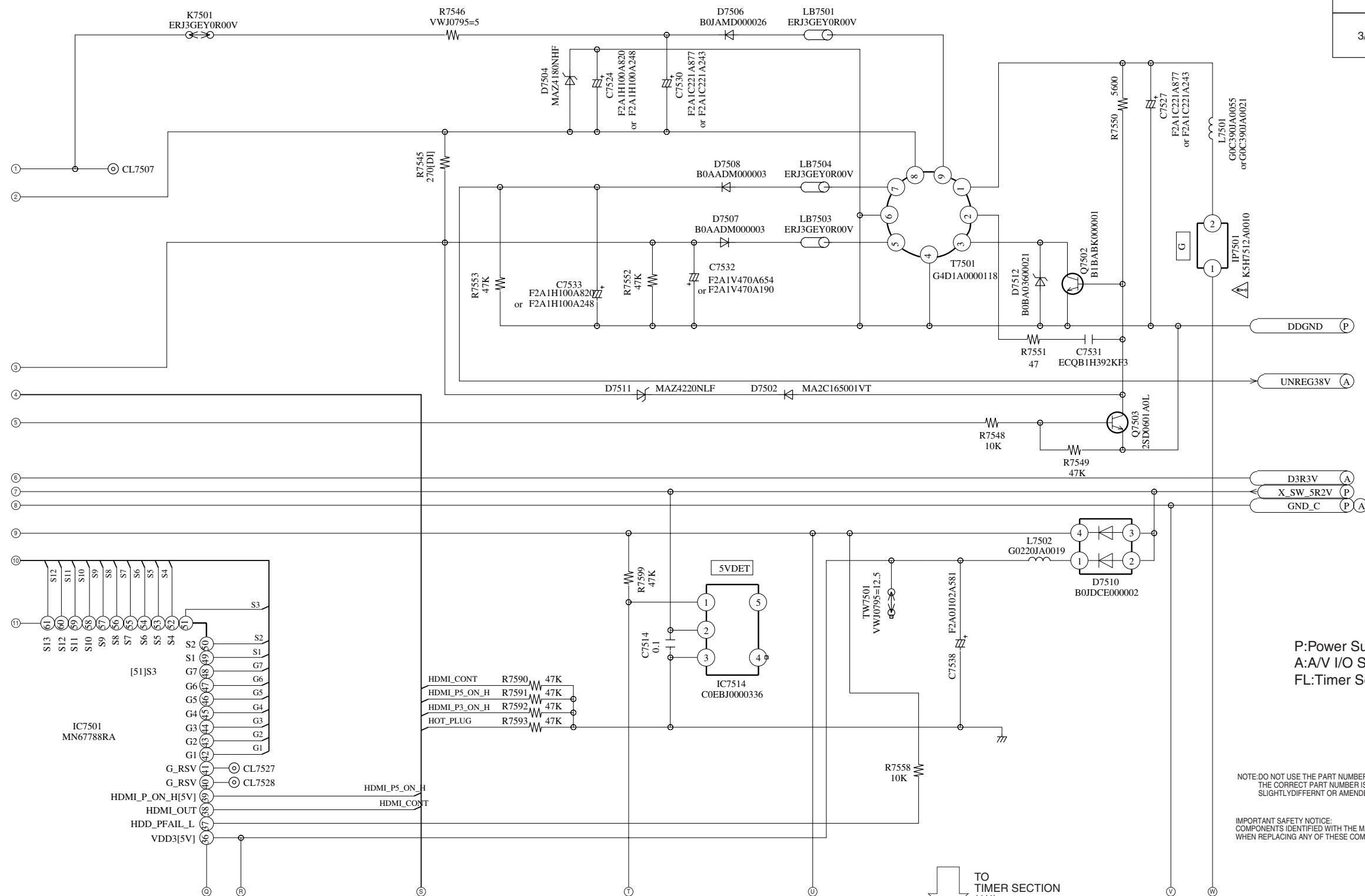


TO  
TIMER SECTION  
(3/4)



DMR-ES25P/PC  
Timer(1/4) Section  
(Main P.C.B.(3/3))  
Schematic Diagram(FL)

1/4	2/4
3/4	4/4

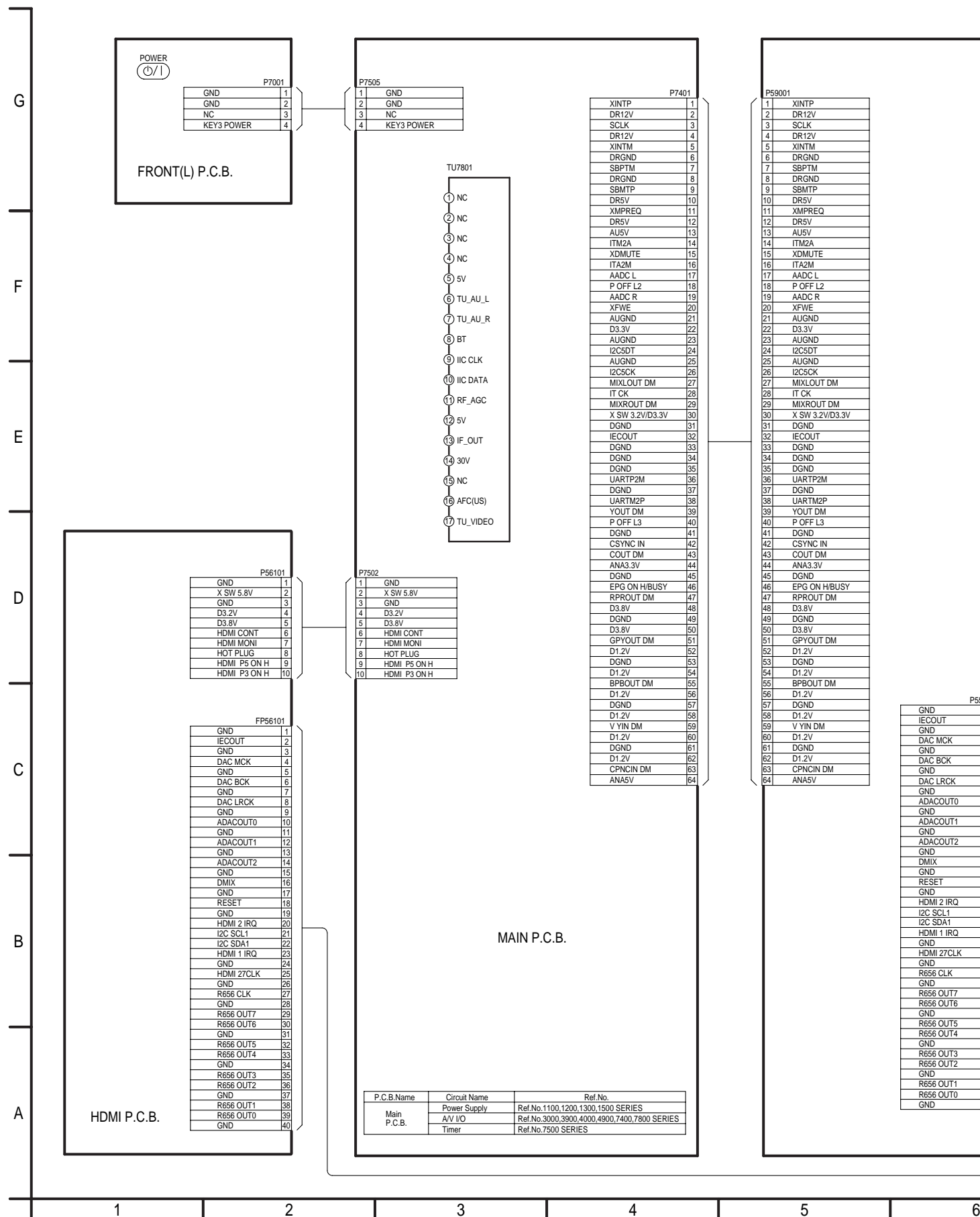
P: Power Supply Section: (Page: **A**)A: A/V I/O Section: (Page: **B**)FL: Timer Section: (Page: **C**)

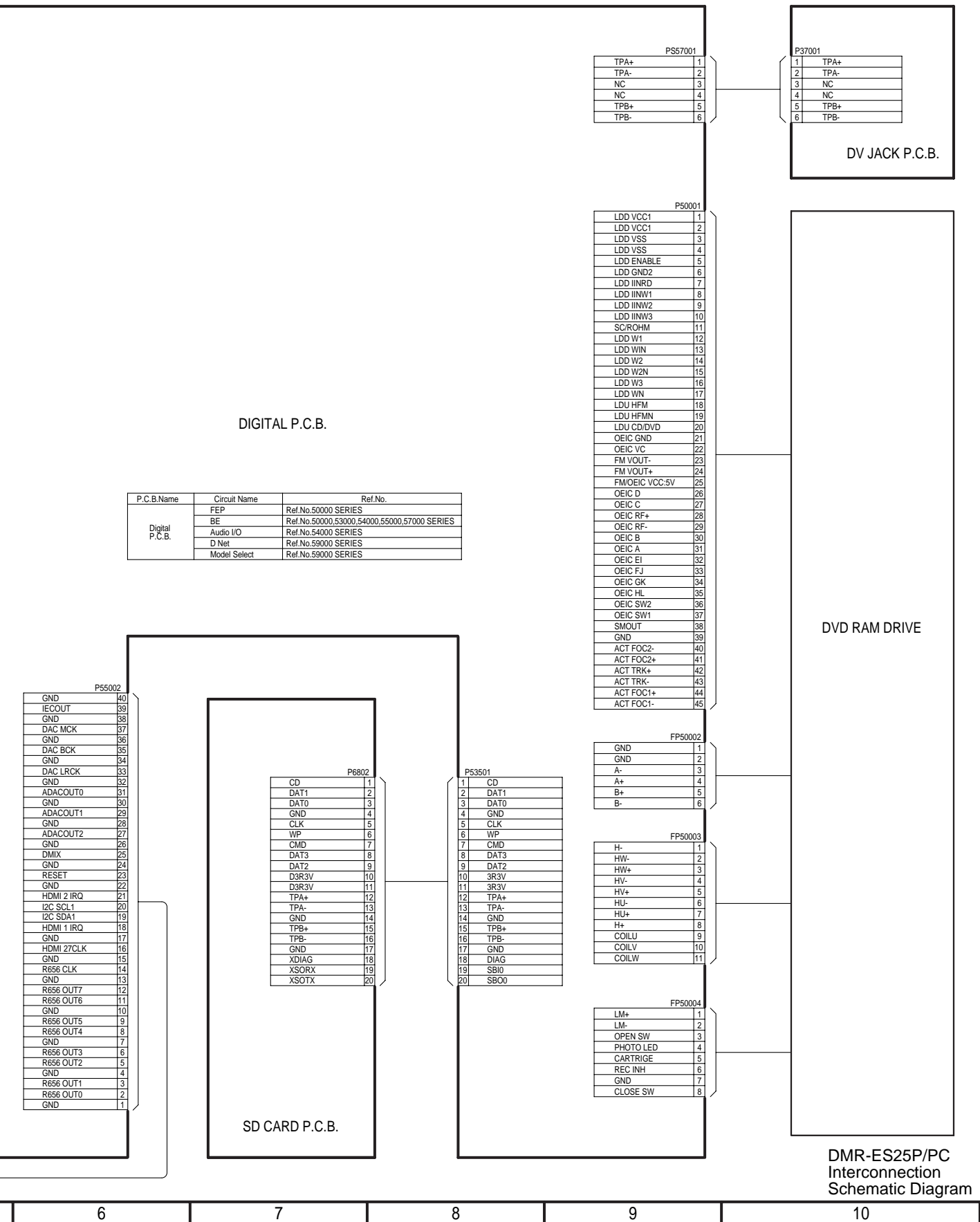




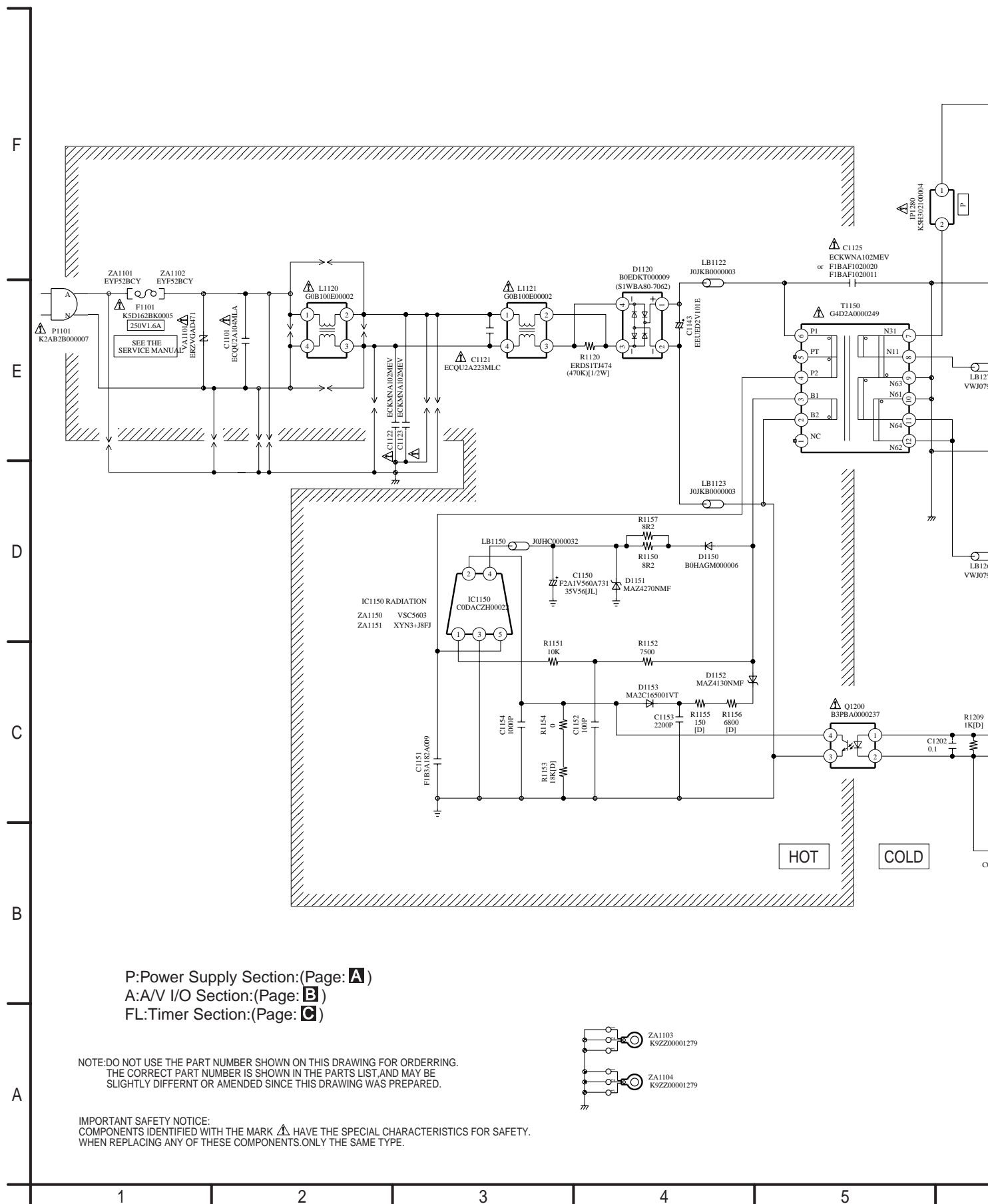
# 13 Schematic Diagram

## 13.1. Interconnection Schematic Diagram

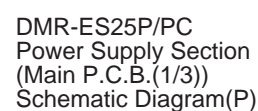




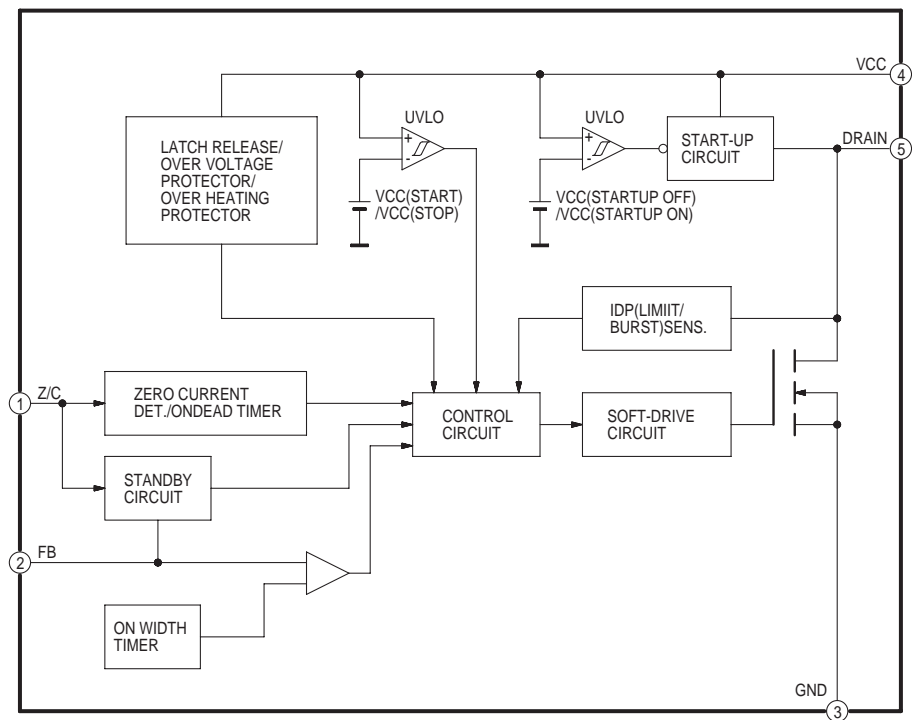
## 13.2. Power Supply Section (Main P.C.B.(1/3)) Schematic Diagram (P)



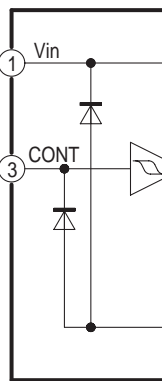




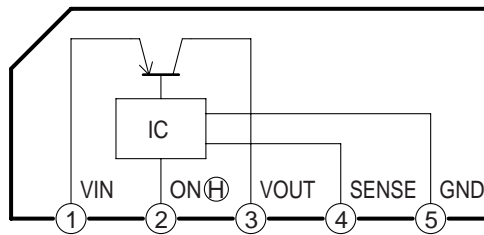
**IC1150  
SWITCHING IC  
IC-DETAIL BLOCK DIAGRAM**



**IC1501  
XSW +5V  
IC-DETA**



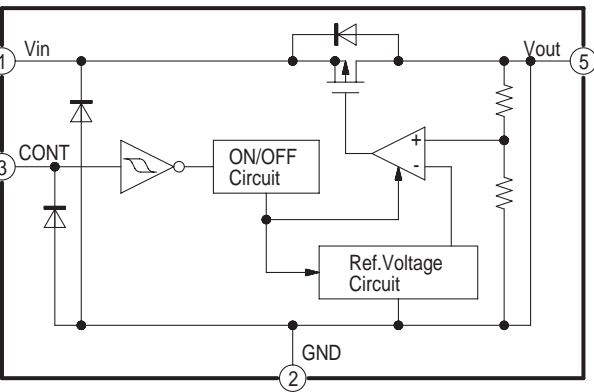
**IC1302  
DR +5V SWITCHING REGULATOR  
IC-DETAIL BLOCK DIAGRAM**



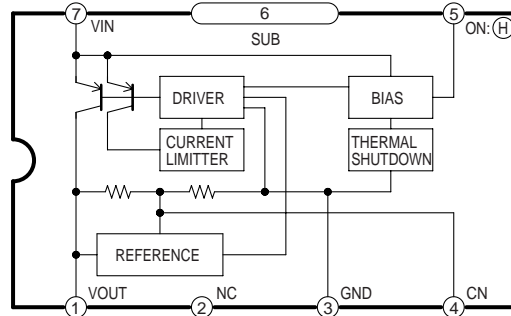
**IC1502  
ANA +  
IC-DET**



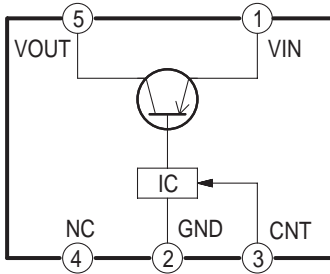
**IC1501**  
**XSW +5.2V SWITCHING REGULATOR**  
**IC-DETAIL BLOCK DIAGRAM**



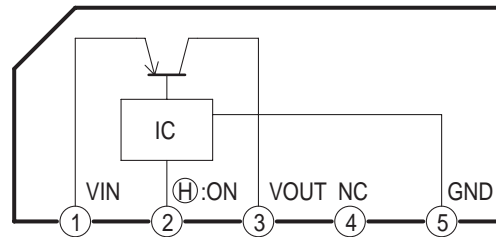
**IC1503**  
**JC +5V SWITCHING REGULATOR**  
**IC-DETAIL BLOCK DIAGRAM**



**IC1502**  
**ANA +5V SWITCHING REGULATOR**  
**IC-DETAIL BLOCK DIAGRAM**



**IC1505**  
**ANA +3.3V SWITCHING REGULATOR**  
**IC-DETAIL BLOCK DIAGRAM**



IC1150 Detail Block Diagram  
 IC1302 Detail Block Diagram  
 IC1501 Detail Block Diagram  
 IC1502 Detail Block Diagram  
 IC1503 Detail Block Diagram  
 IC1505 Detail Block Diagram  
 DMR-ES25P/PC IC-Detail Block Diagram

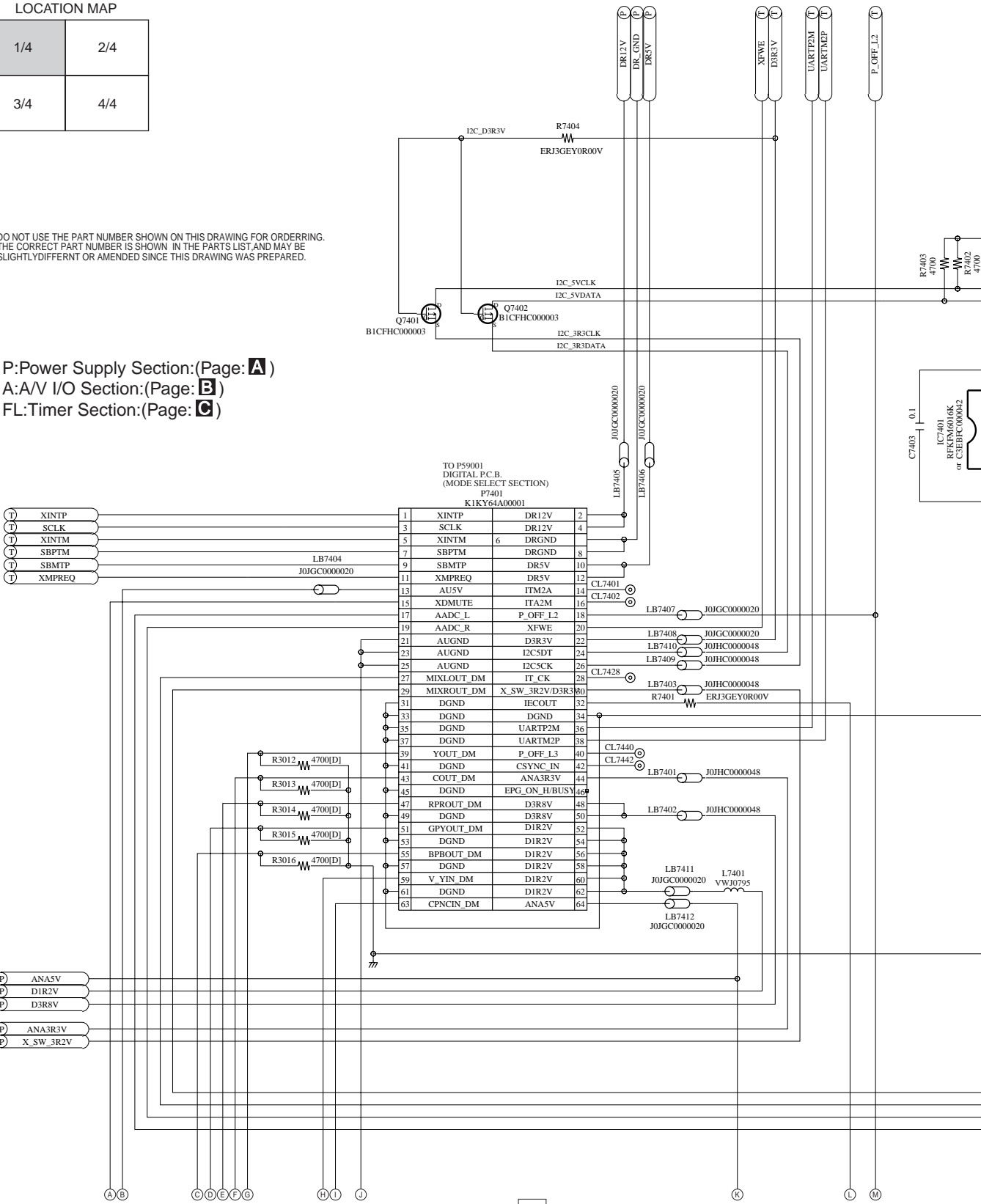
13.3. A/V I/O (1/4) Section (Main P.C.B.(2/3)) Schematic Diagram (A)

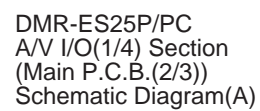
LOCATION MAP

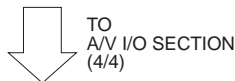
1/4	2/4
3/4	4/4

NOTE:DO NOT USE THE PART NUMBER SHOWN ON THIS DRAWING FOR ORDERING.  
THE CORRECT PART NUMBER IS SHOWN IN THE PARTS LIST AND MAY BE  
SLIGHTLYDIFFERNT OR AMENDED SINCE THIS DRAWING WAS PREPARED.

P:Power Supply Section:(Page: **A**)  
A:A/V I/O Section:(Page: **B**)  
FL:Timer Section:(Page: **C**)

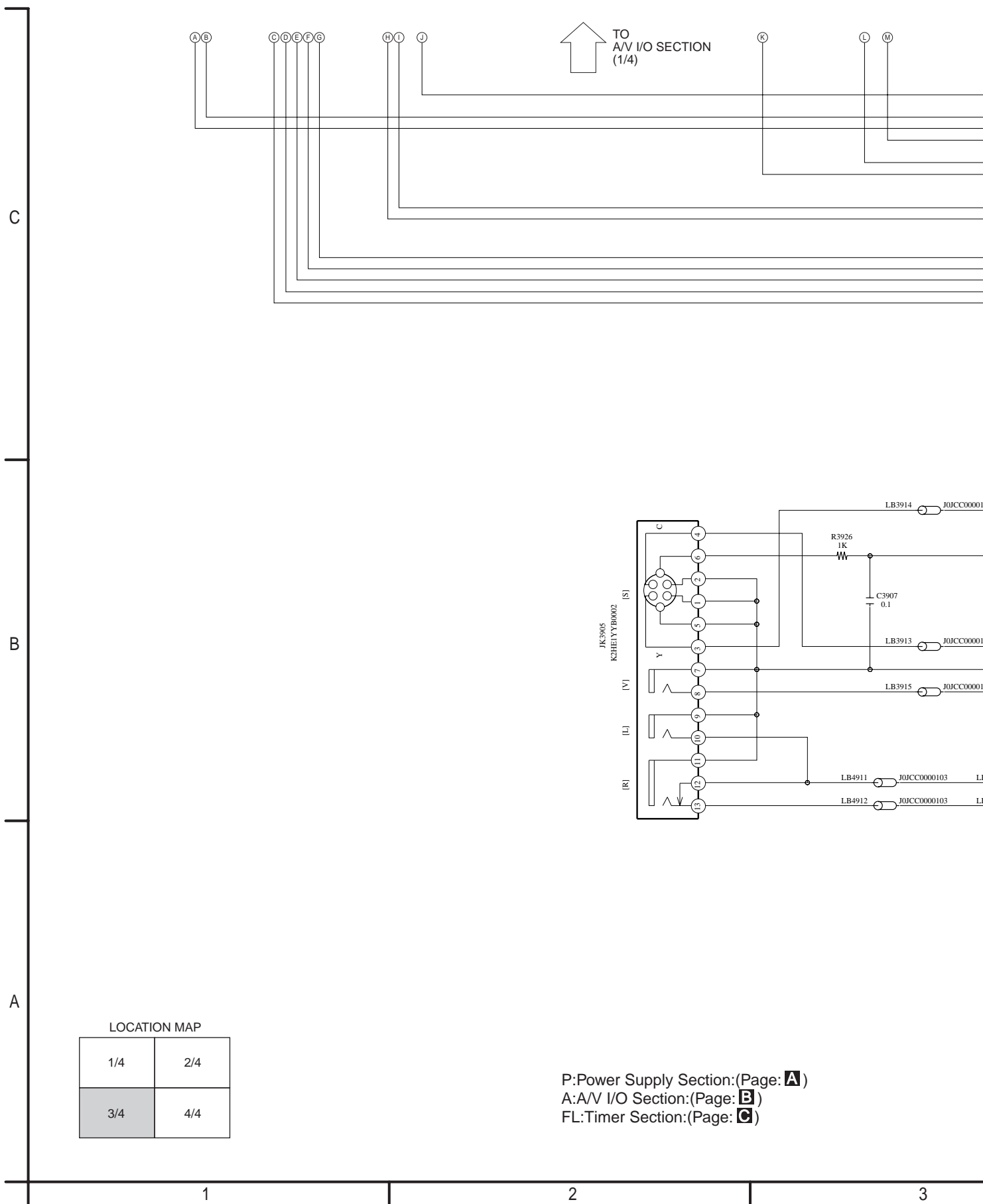




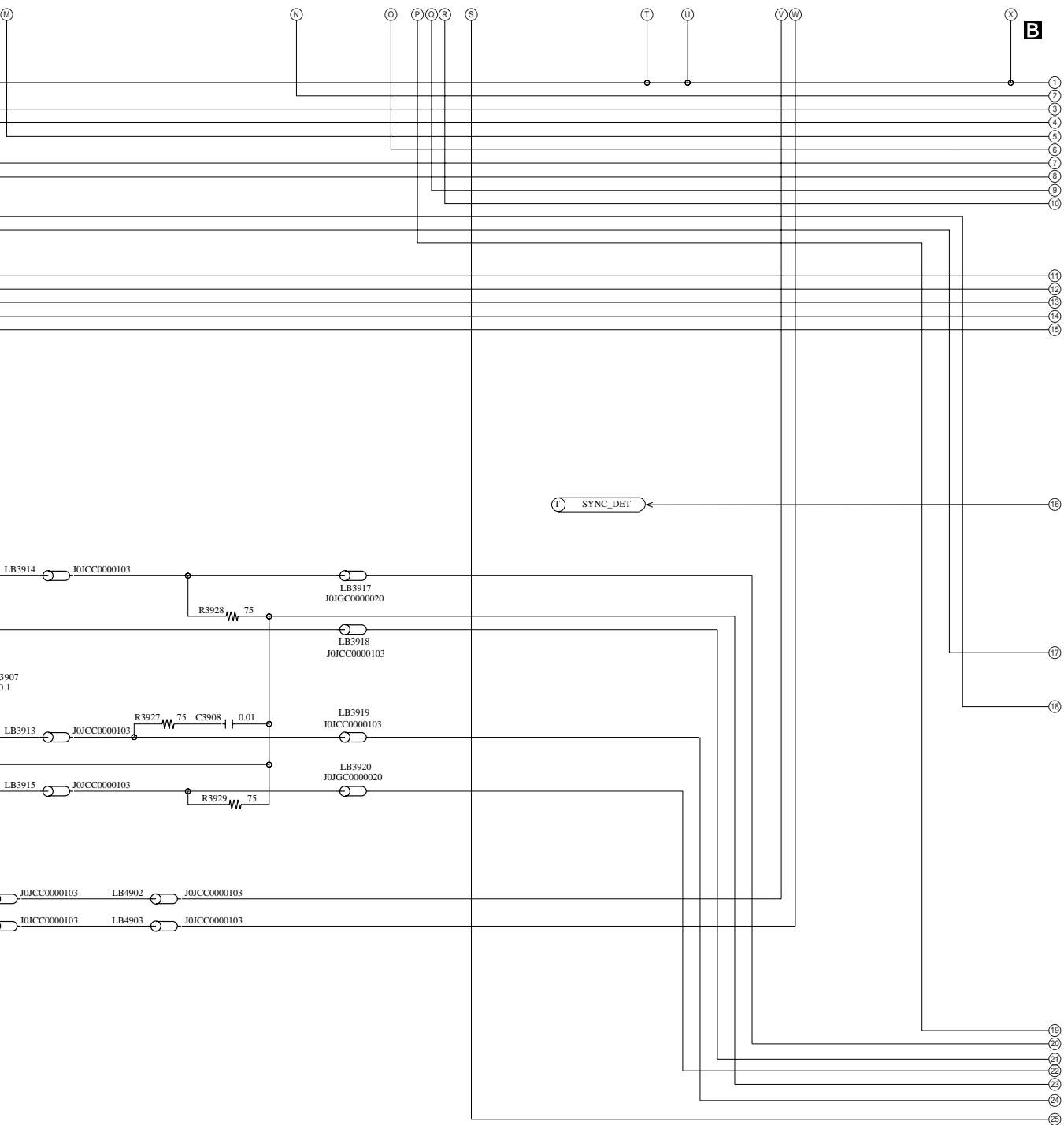




13.5. A/V I/O (3/4) Section (Main P.C.B.(2/3)) Schematic Diagram (A)

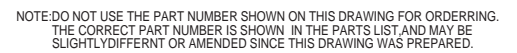


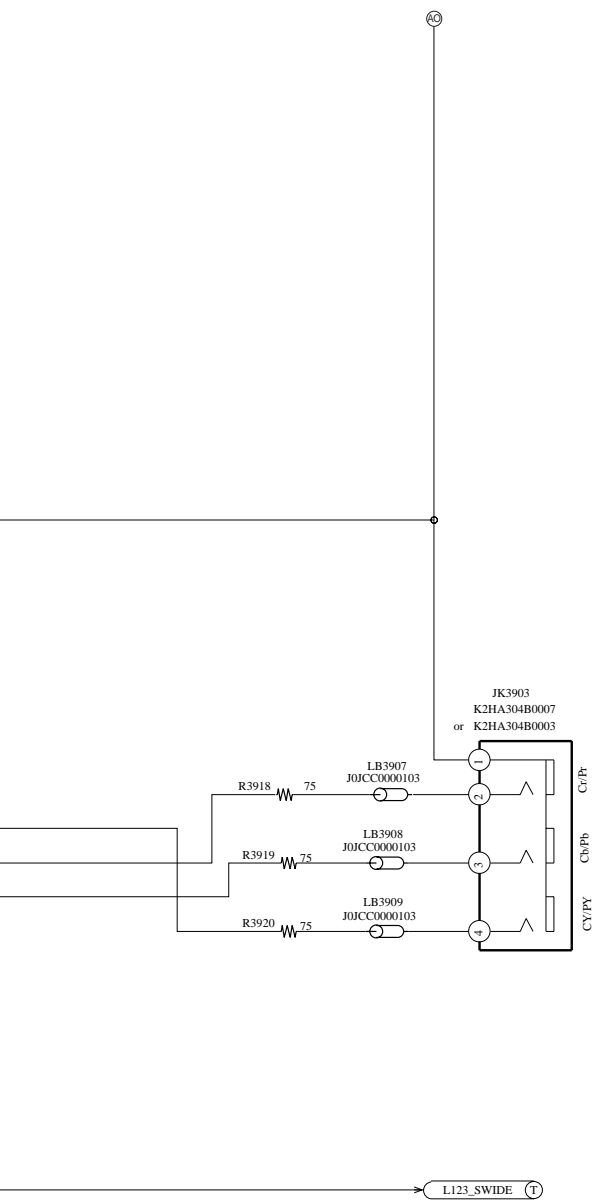




NOTE:DO NOT USE THE PART NUMBER SHOWN ON THIS DRAWING FOR ORDERING.  
THE CORRECT PART NUMBER IS SHOWN IN THE PARTS LIST AND MAY BE  
SLIGHTLYDIFFERNT OR AMENDED SINCE THIS DRAWING WAS PREPARED.

DMR-ES25P/PC  
A/V I/O(3/4) Section  
(Main P.C.B.(2/3))  
Schematic Diagram(A)





**B**

LOCATION MAP

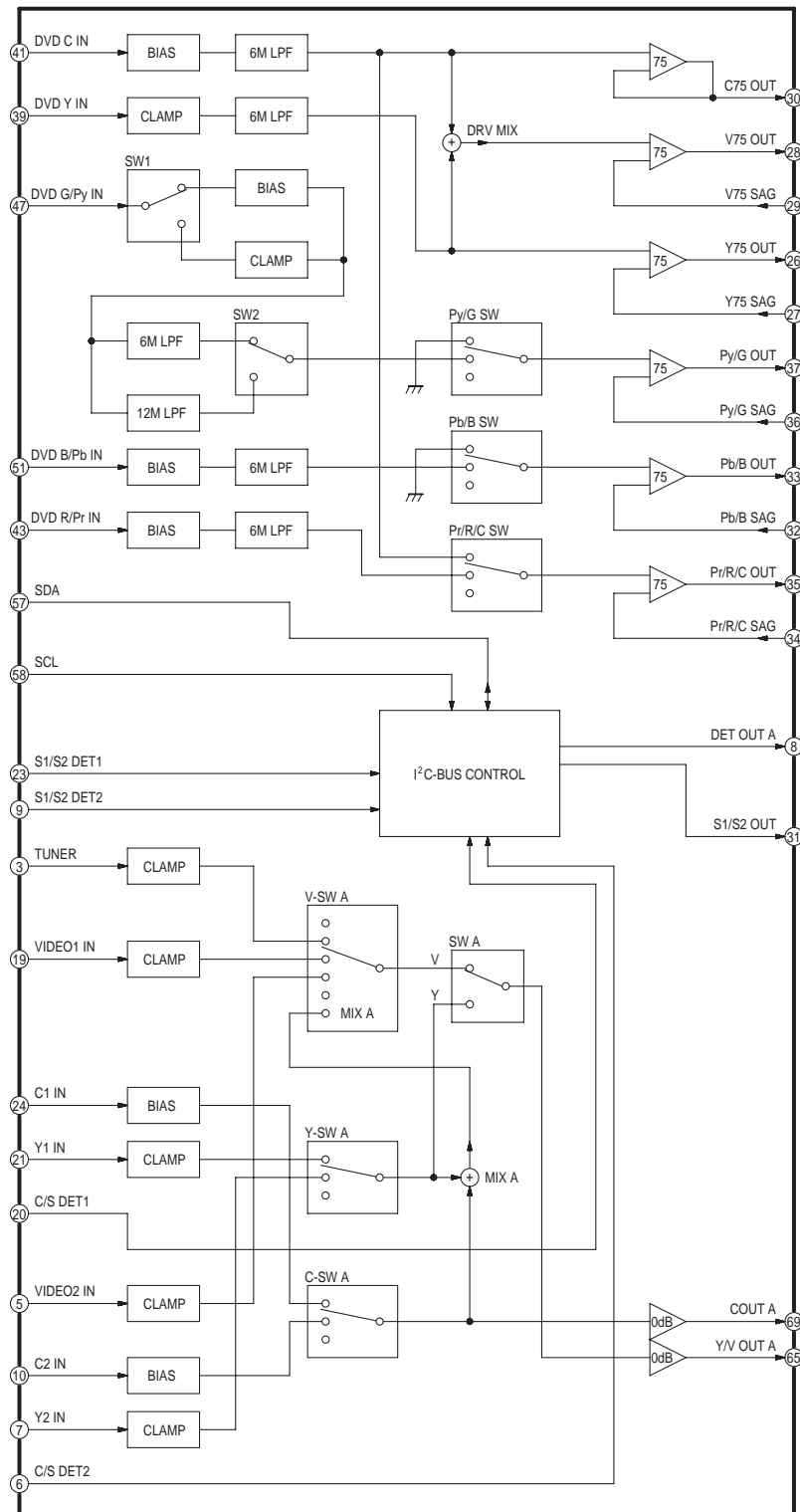
1/4	2/4
3/4	4/4

ORDERING.  
D MAY BE  
REPAIRED.

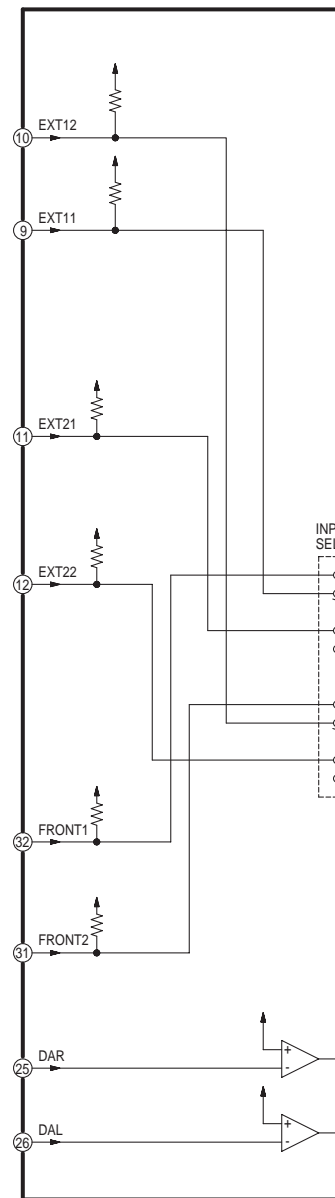
P:Power Supply Section:(Page: **A**)  
A:A/V I/O Section:(Page: **B**)  
FL:Timer Section:(Page: **C**)

DMR-ES25P/PC  
A/V I/O(4/4) Section  
(Main P.C.B.(2/3))  
Schematic Diagram(A)

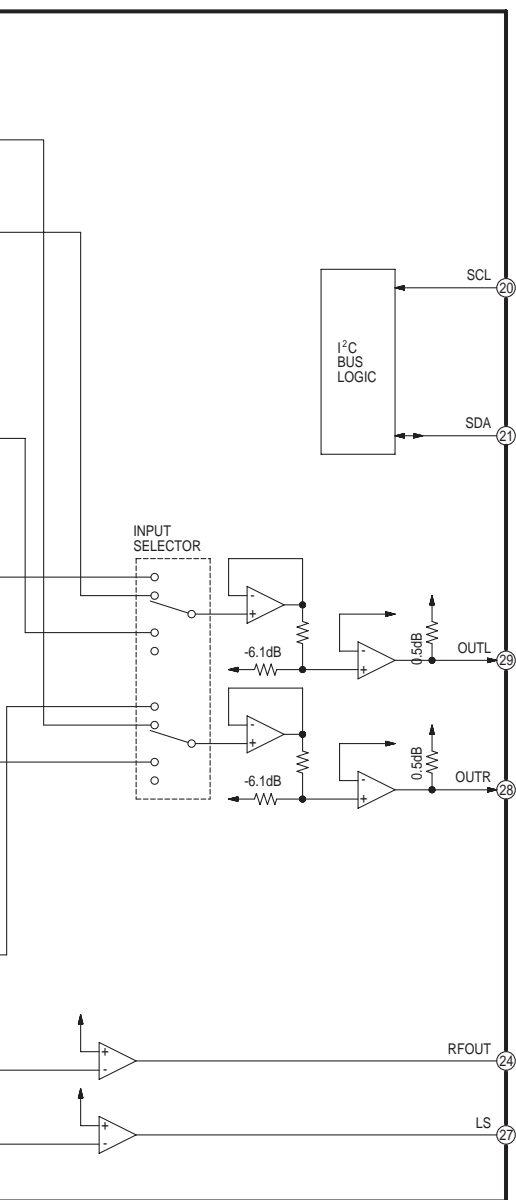
# **IC3001** **VIDEO PROCESSOR** **IC-DETAIL BLOCK DIAGRAM**



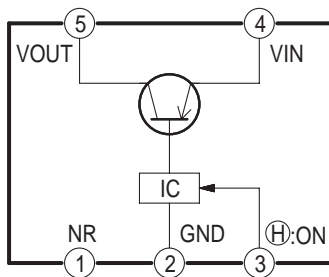
# **IC4001** **AUDIO PROC** **IC-DETAIL BL**



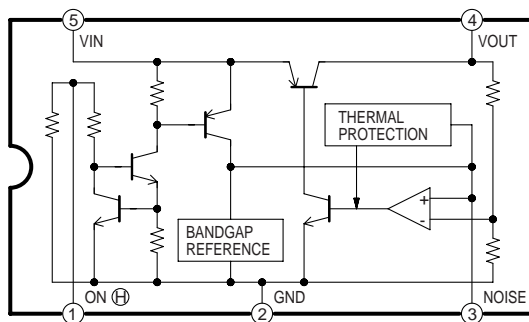
# **IC4001** **AUDIO PROCESSOR** **IC-DETAIL BLOCK DIAGRAM**



# **IC4002** **AU +5V SWITCHING REGULATOR** **IC-DETAIL BLOCK DIAGRAM**



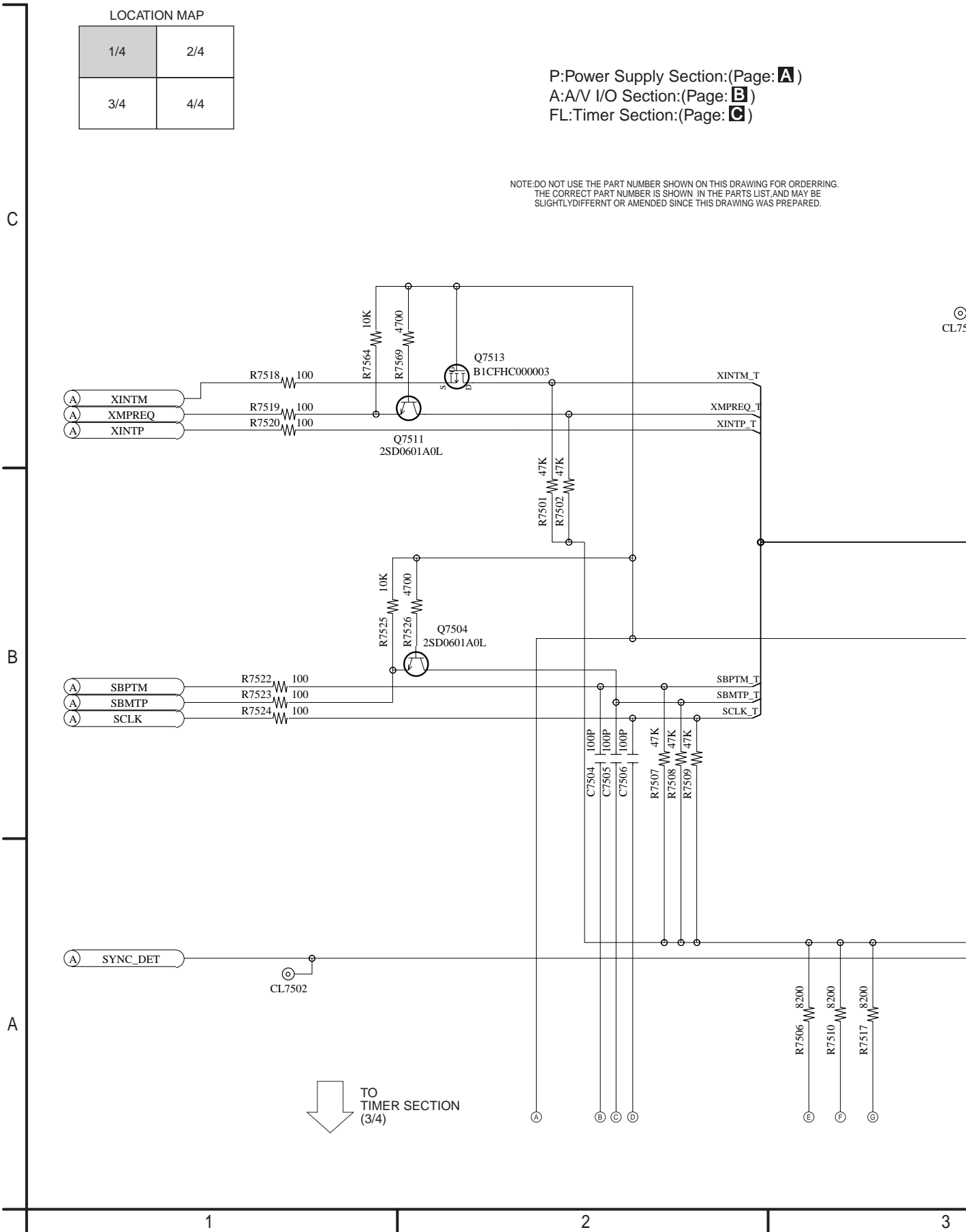
# **IC4003** **AU +9V SWITCHING REGULATOR** **IC-DETAIL BLOCK DIAGRAM**



IC3001 Detail Block Diagram  
 IC4001 Detail Block Diagram  
 IC4002 Detail Block Diagram  
 IC4003 Detail Block Diagram  
 DMR-ES25P/PC IC-Detail Block Diagram

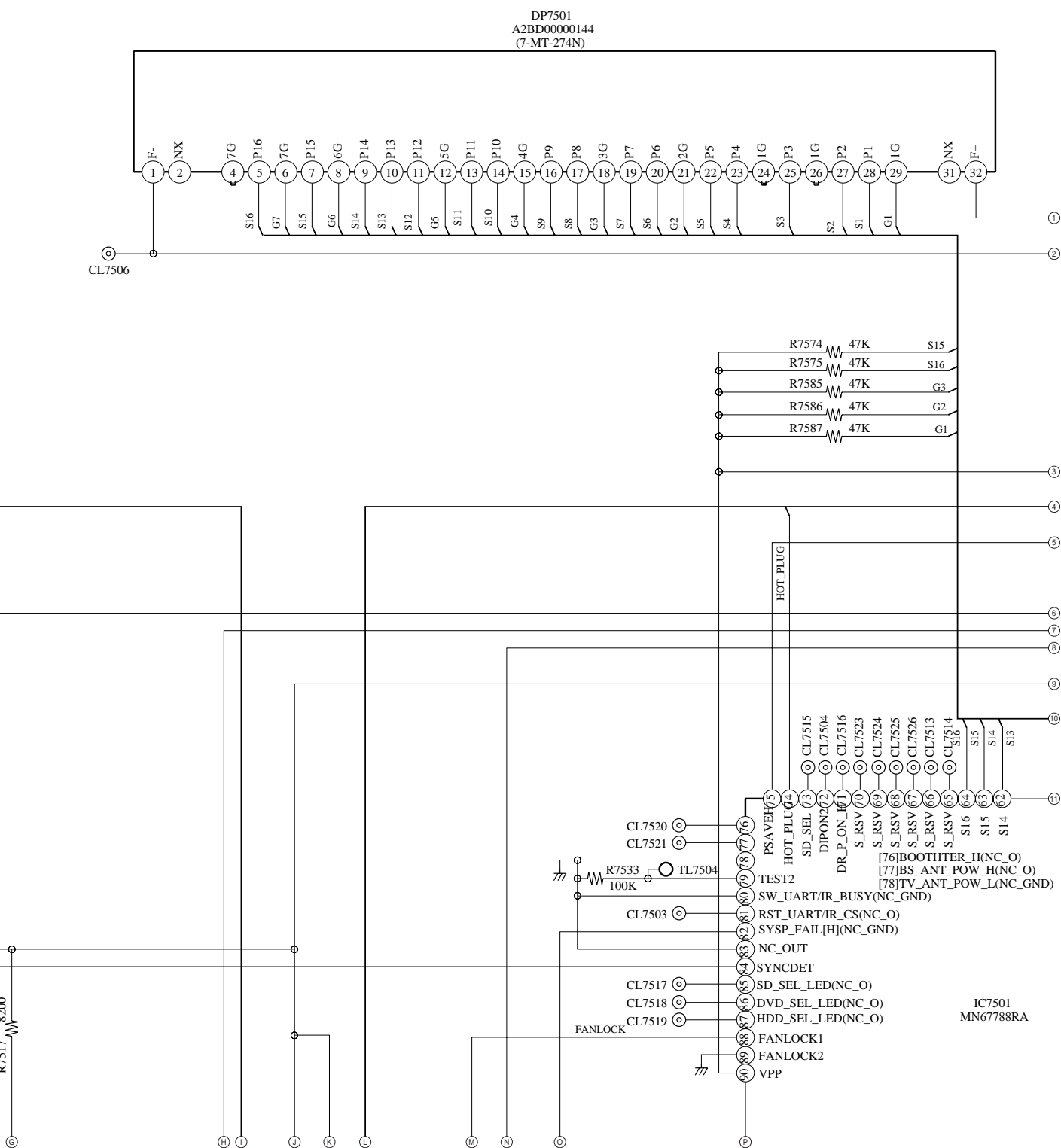


13.7. Timer (1/4) Section (Main P.C.B.(3/3)) Schematic Diagram Schematic Diagram



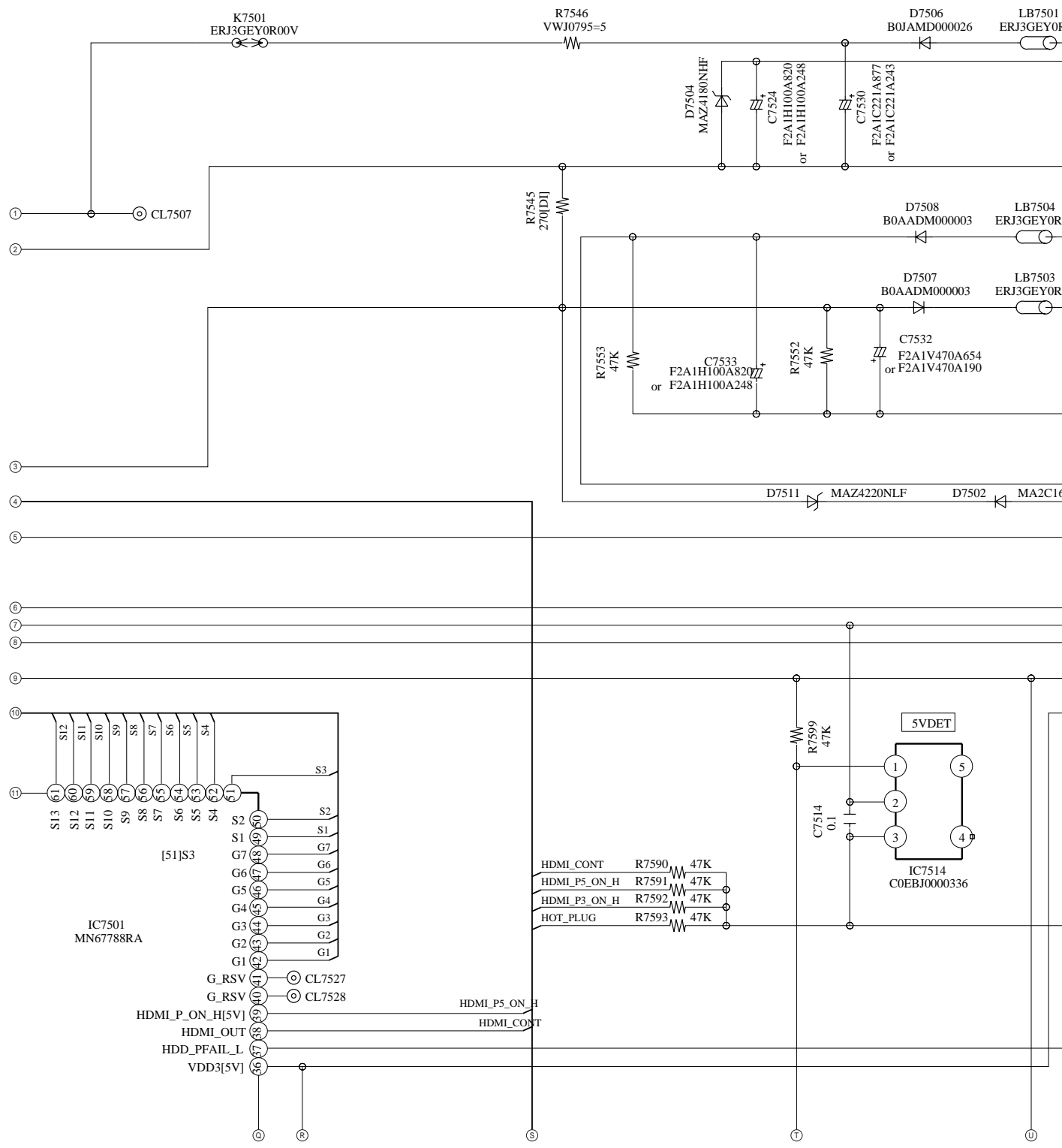
# ic Diagram (FL)

C



DMR-ES25P/PC  
Timer(1/4) Section  
(Main P.C.B.(3/3))  
Schematic Diagram(FL)

13.8. Timer (2/4) Section (Main P.C.B.(3/3)) Schematic Diagram Schematic Diagram (



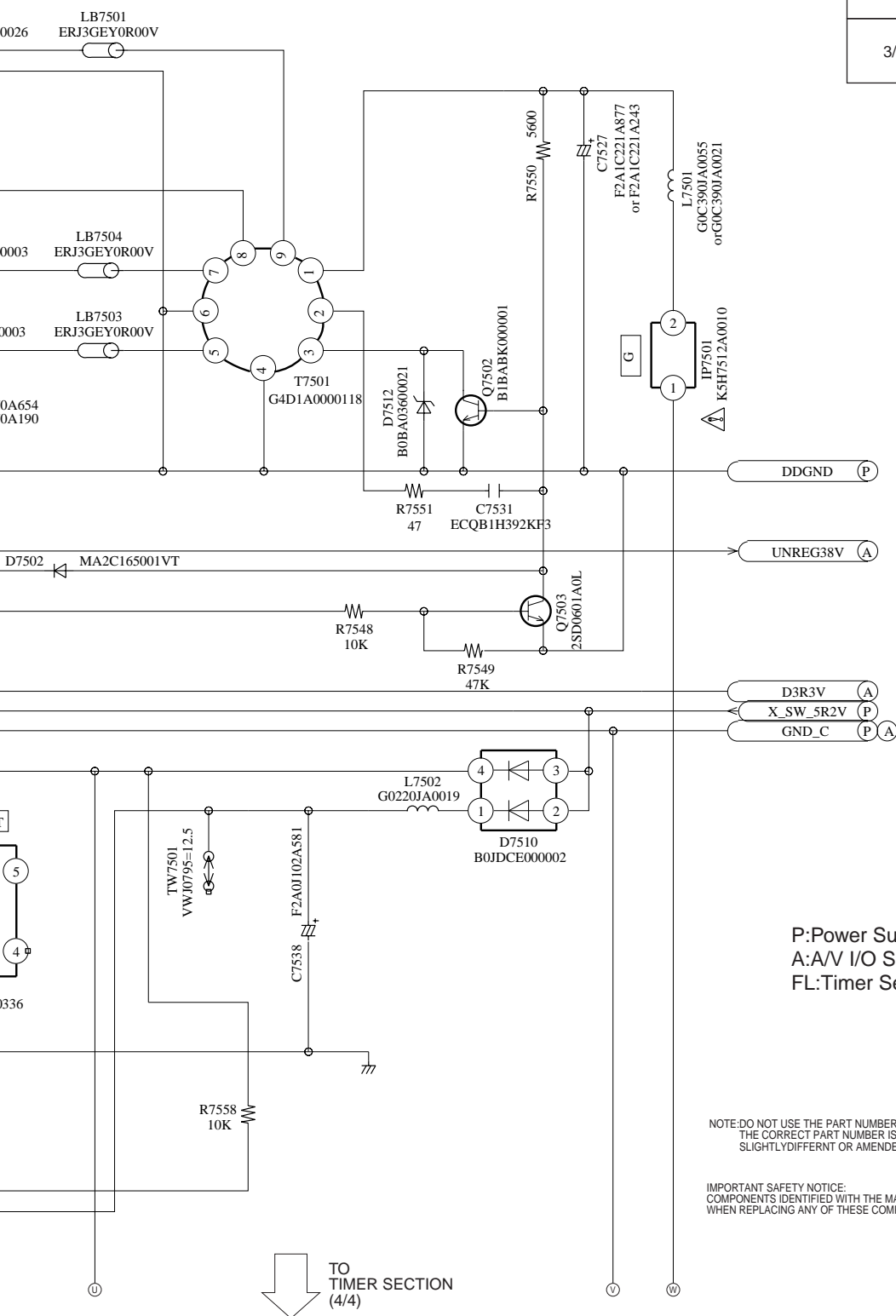


# Diagram (FL)

LOCATION MAP

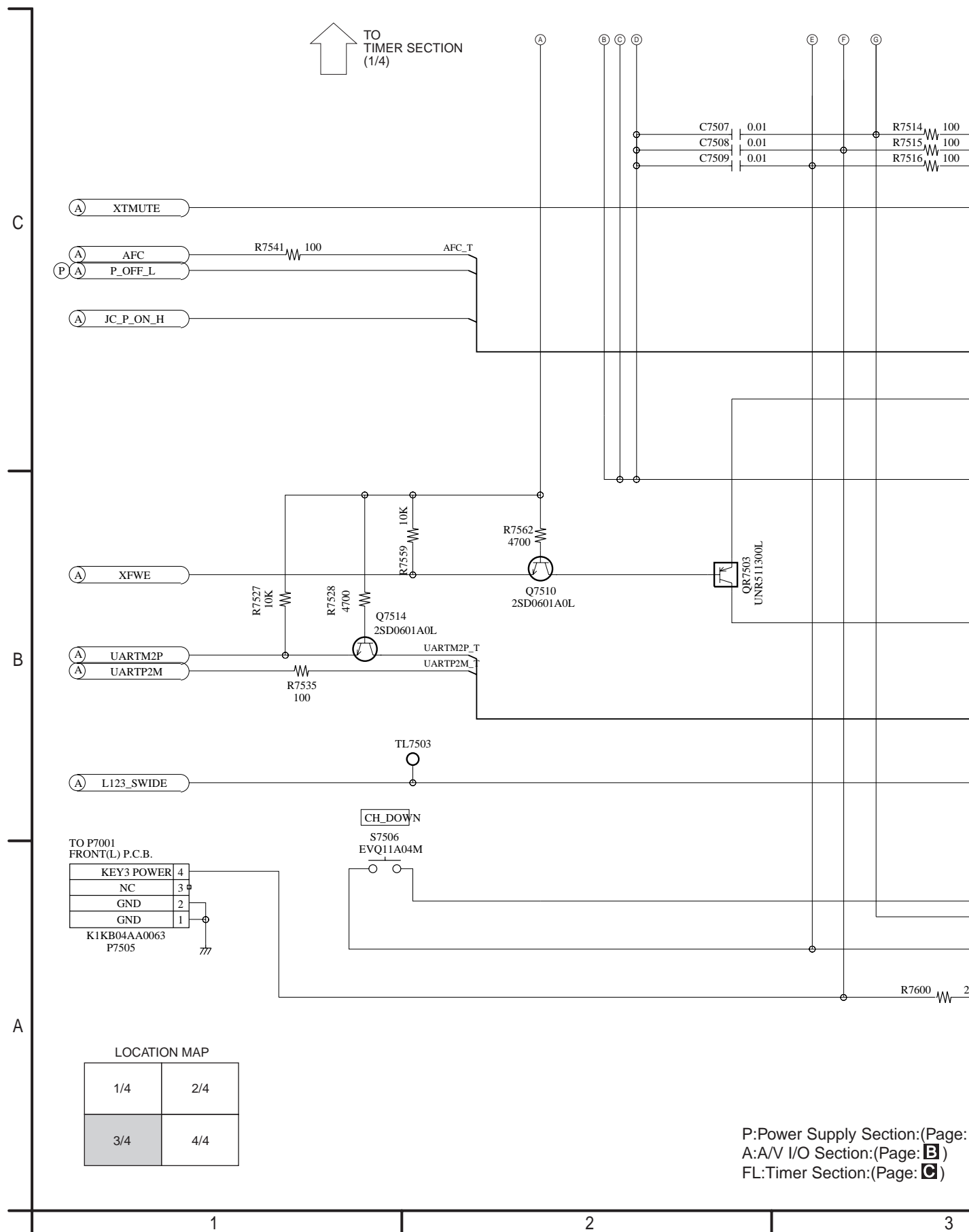
1/4	2/4
3/4	4/4

**C**

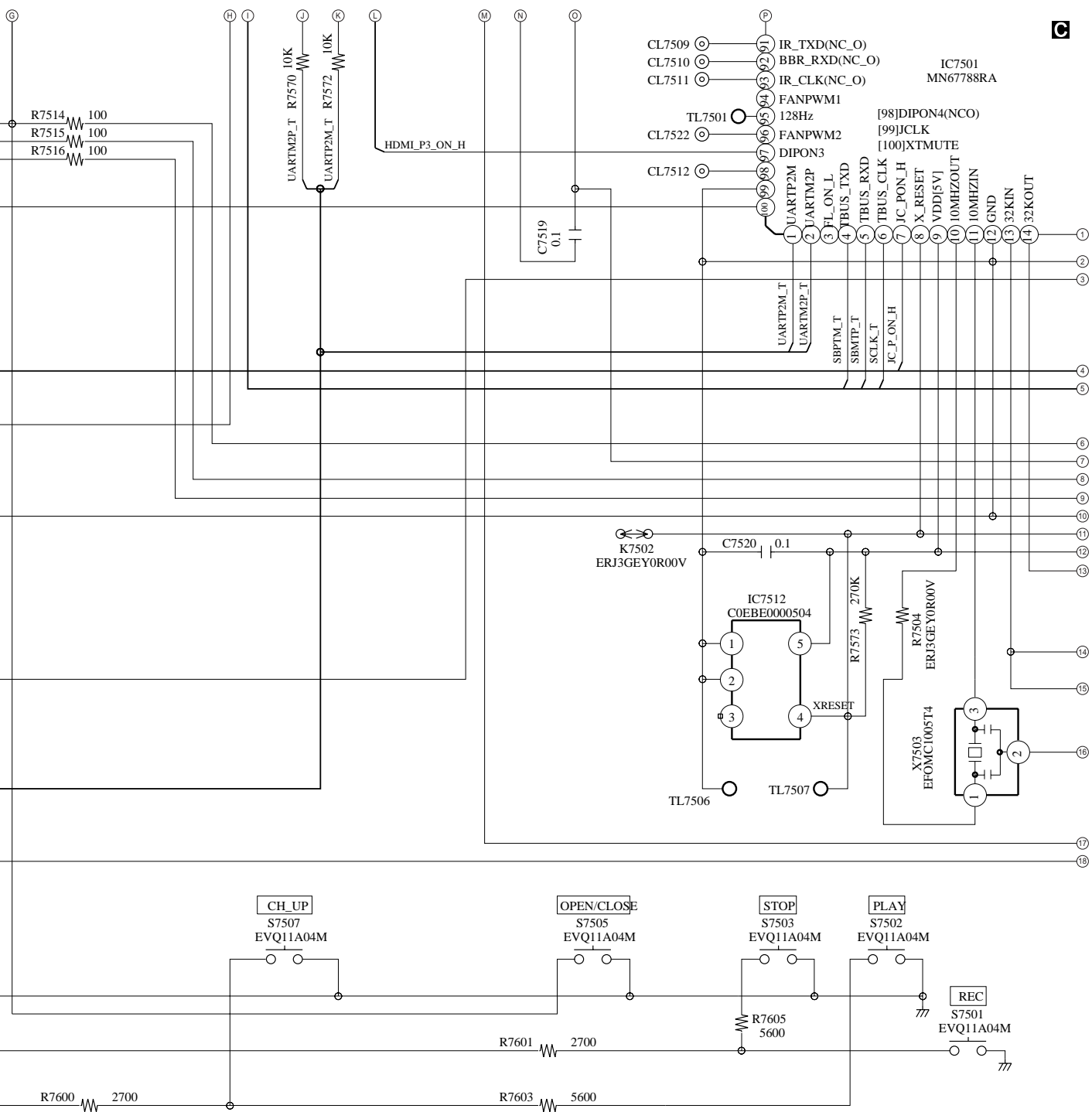


DMR-ES25P/PC  
Timer(2/4) Section  
(Main P.C.B.(3/3))  
Schematic Diagram(FL)

13.9. Timer (3/4) Section (Main P.C.B.(3/3)) Schematic Diagram Schematic Diagram



# ic Diagram (FL)

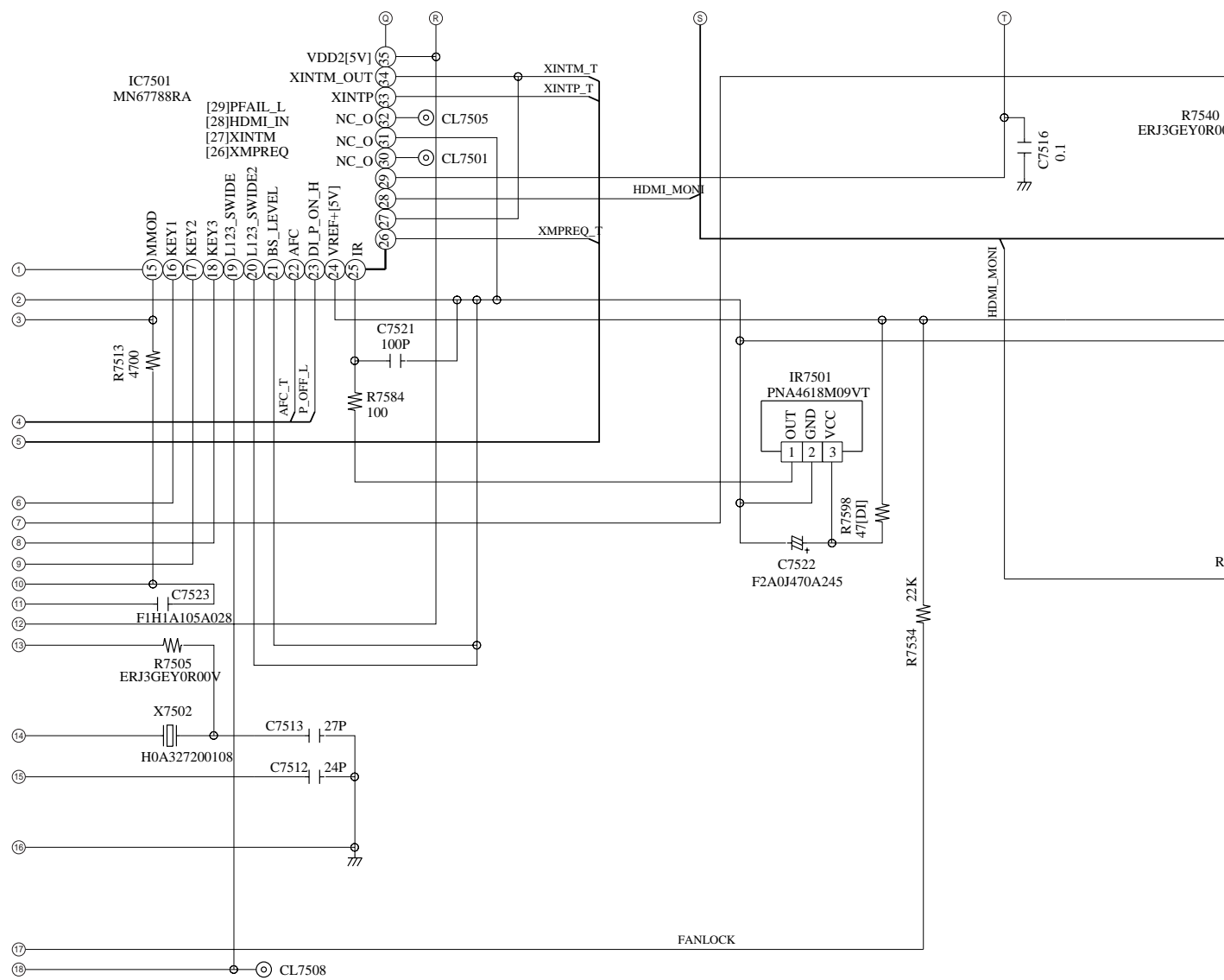


Section:(Page: **A**)  
 (Page: **B**)  
 (Page: **C**)

NOTE:DO NOT USE THE PART NUMBER SHOWN ON THIS DRAWING FOR ORDERING.  
 THE CORRECT PART NUMBER IS SHOWN IN THE PARTS LIST,AND MAY BE  
 SLIGHTLYDIFFERNT OR AMENDED SINCE THIS DRAWING WAS PREPARED.

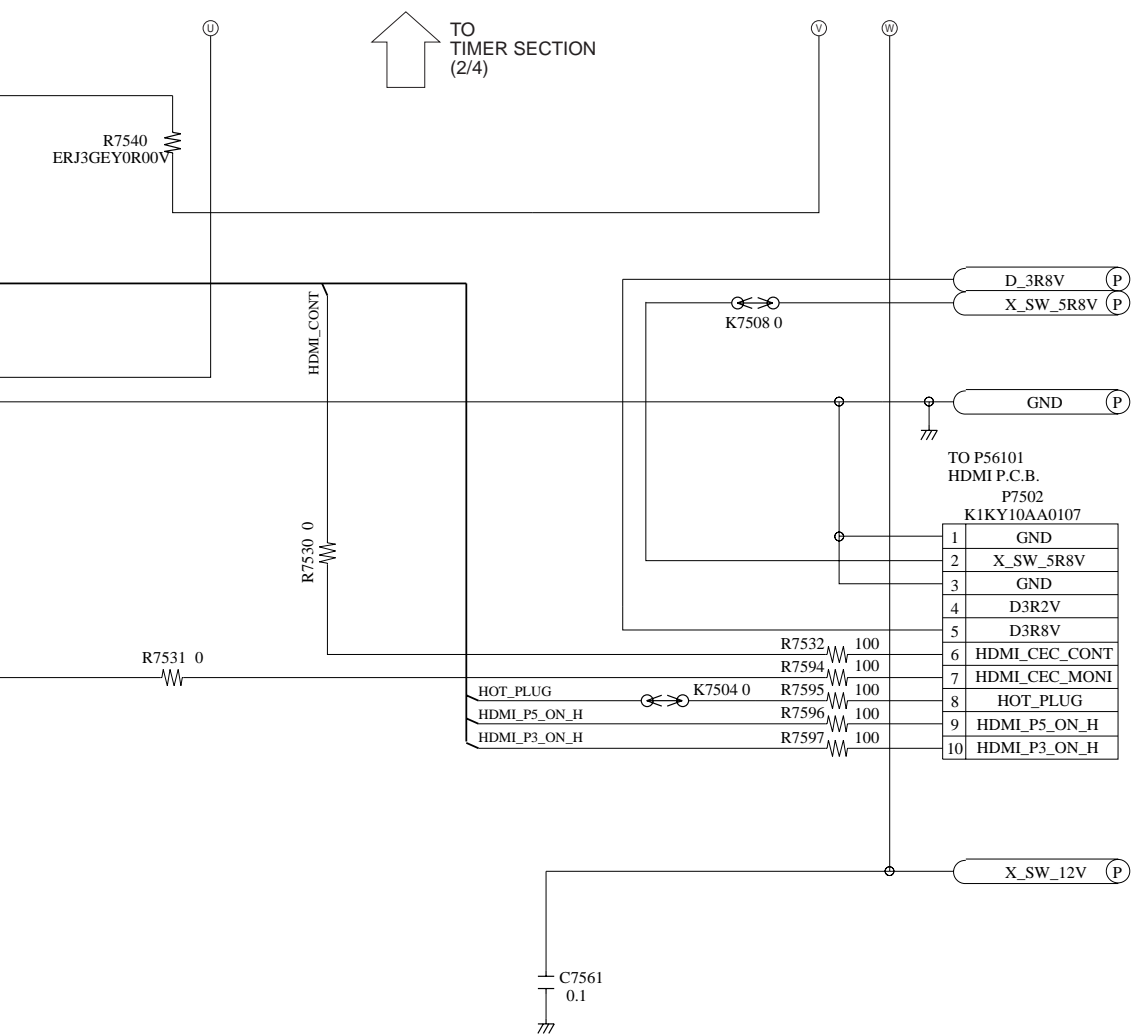
DMR-ES25P/PC  
 Timer(3/4) Section  
 (Main P.C.B.(3/3))  
 Schematic Diagram(FL)

13.10. Timer (4/4) Section (Main P.C.B.(3/3)) Schematic Diagram Schematic Diagram (



NOTE:DO NOT USE THE PART NUMBER SHOWN ON THIS DRAWING FOR ORDERING.  
THE CORRECT PART NUMBER IS SHOWN IN THE PARTS LIST AND MAY BE  
SLIGHTLYDIFFERNT OR AMENDED SINCE THIS DRAWING WAS PREPARED.

# Diagram (FL)



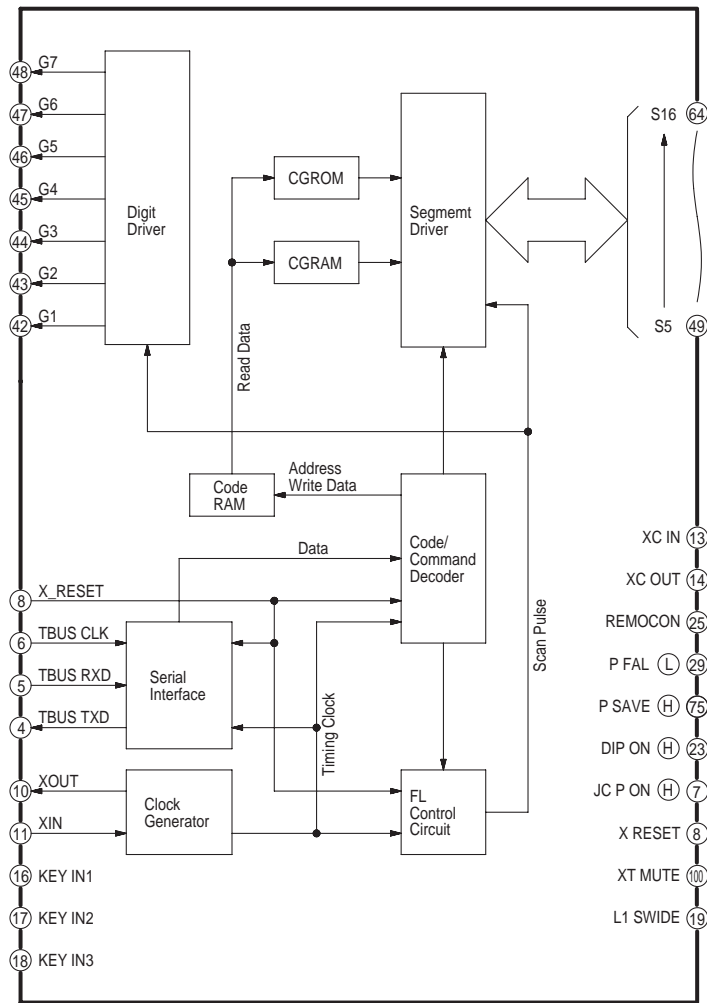
LOCATION MAP

1/4	2/4
3/4	4/4

P:Power Supply Section:(Page: **A**)  
A:A/V I/O Section:(Page: **B**)  
FL:Timer Section:(Page: **C**)

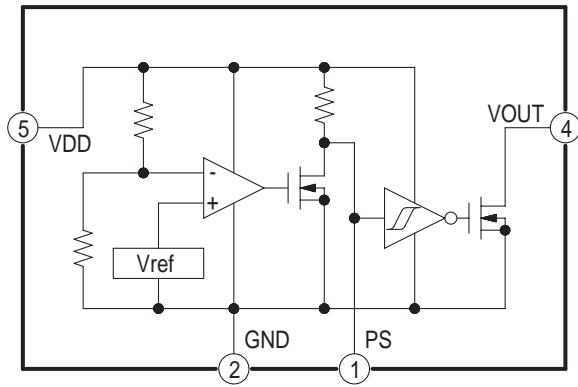
DMR-ES25P/PC  
Timer(4/4) Section  
(Main P.C.B.(3/3))  
Schematic Diagram(FL)

# IC7501 TIMER IC-DETAIL BLOCK DIAGRAM

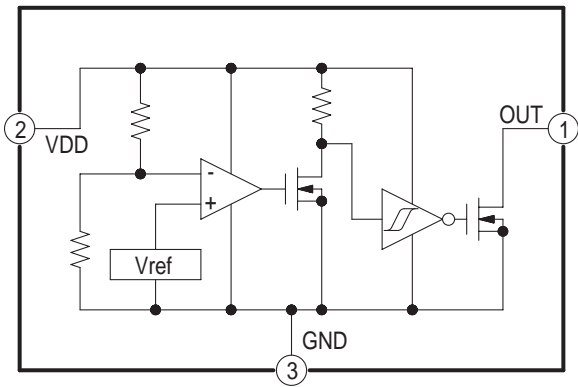




**IC7512  
X RESET  
IC-DETAIL BLOCK DIAGRAM**



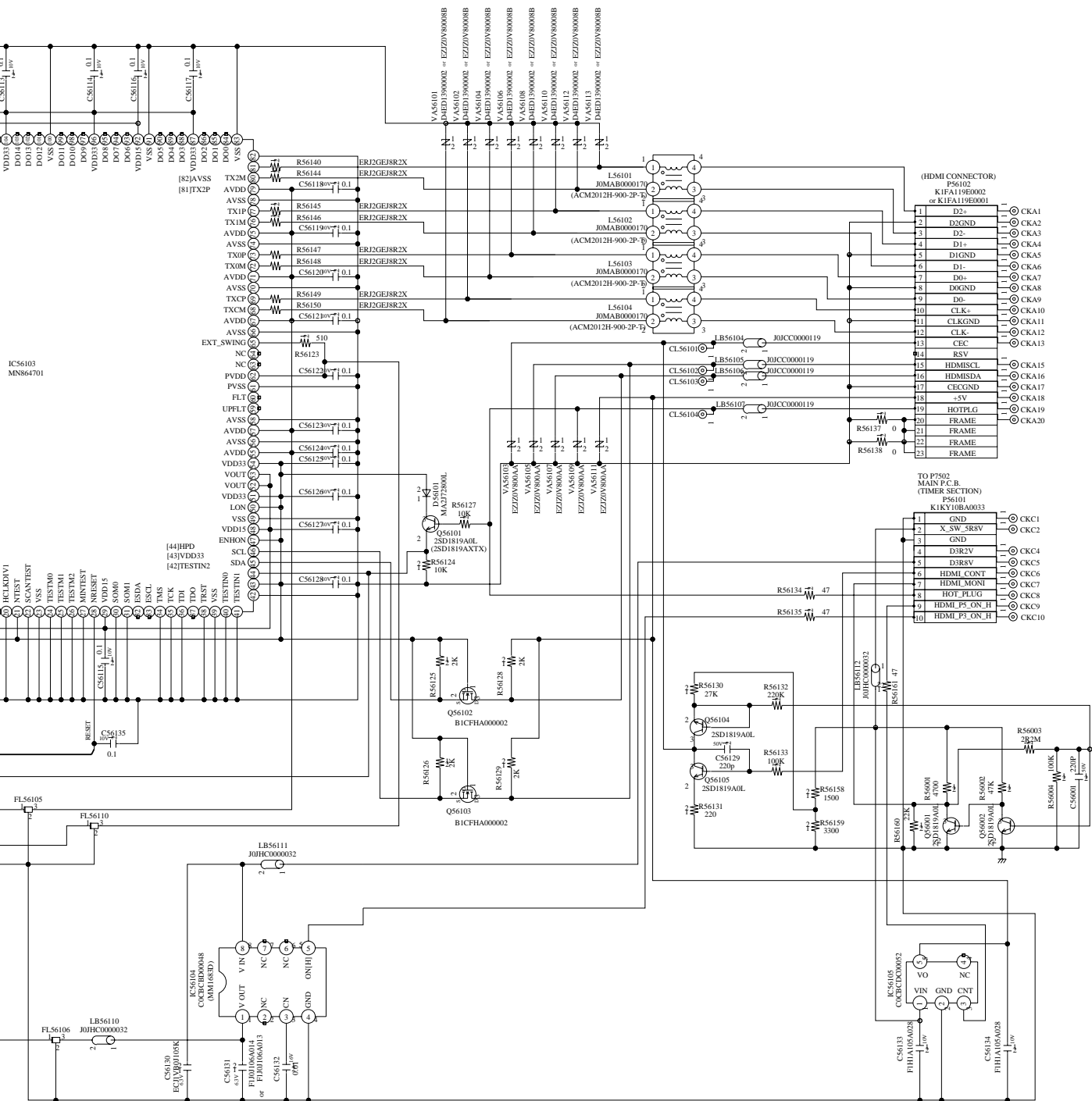
**IC7514  
RESET  
IC-DETAIL BLOCK DIAGRAM**



IC7501 Detail Block Diagram  
IC7512 Detail Block Diagram  
IC7514 Detail Block Diagram  
DMR-ES25P/PC IC-Detail Block Diagram







NOT USE THE PART NUMBER SHOWN ON THIS DRAWING FOR ORDERING.  
 THE CORRECT PART NUMBER IS SHOWN IN THE PARTS LIST, AND MAY BE  
 SLIGHTLY DIFFERENT OR AMENDED SINCE THIS DRAWING WAS PREPARED.

DMR-ES25P/PC  
 HDMI Schematic Diagram

6

7

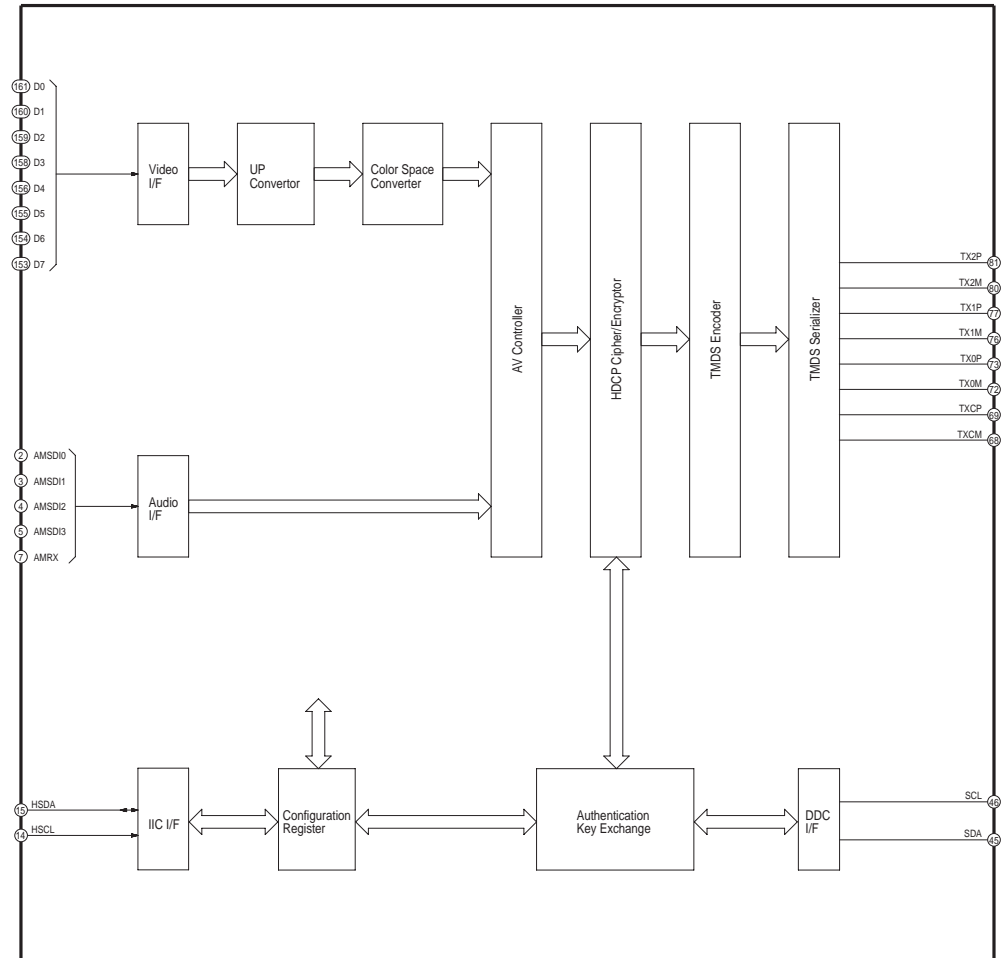
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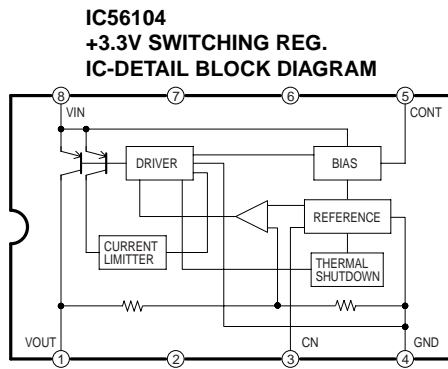
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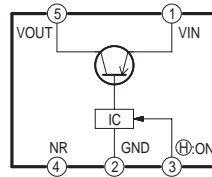


**IC56103**  
**HDMI TRANSMITTER**  
**IC-DETAIL BLOCK DIAGRAM**

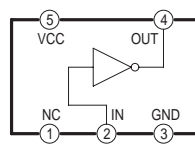




**IC56105**  
**+5V SWITCHING REG.**  
**IC-DETAIL BLOCK DIAGRAM**

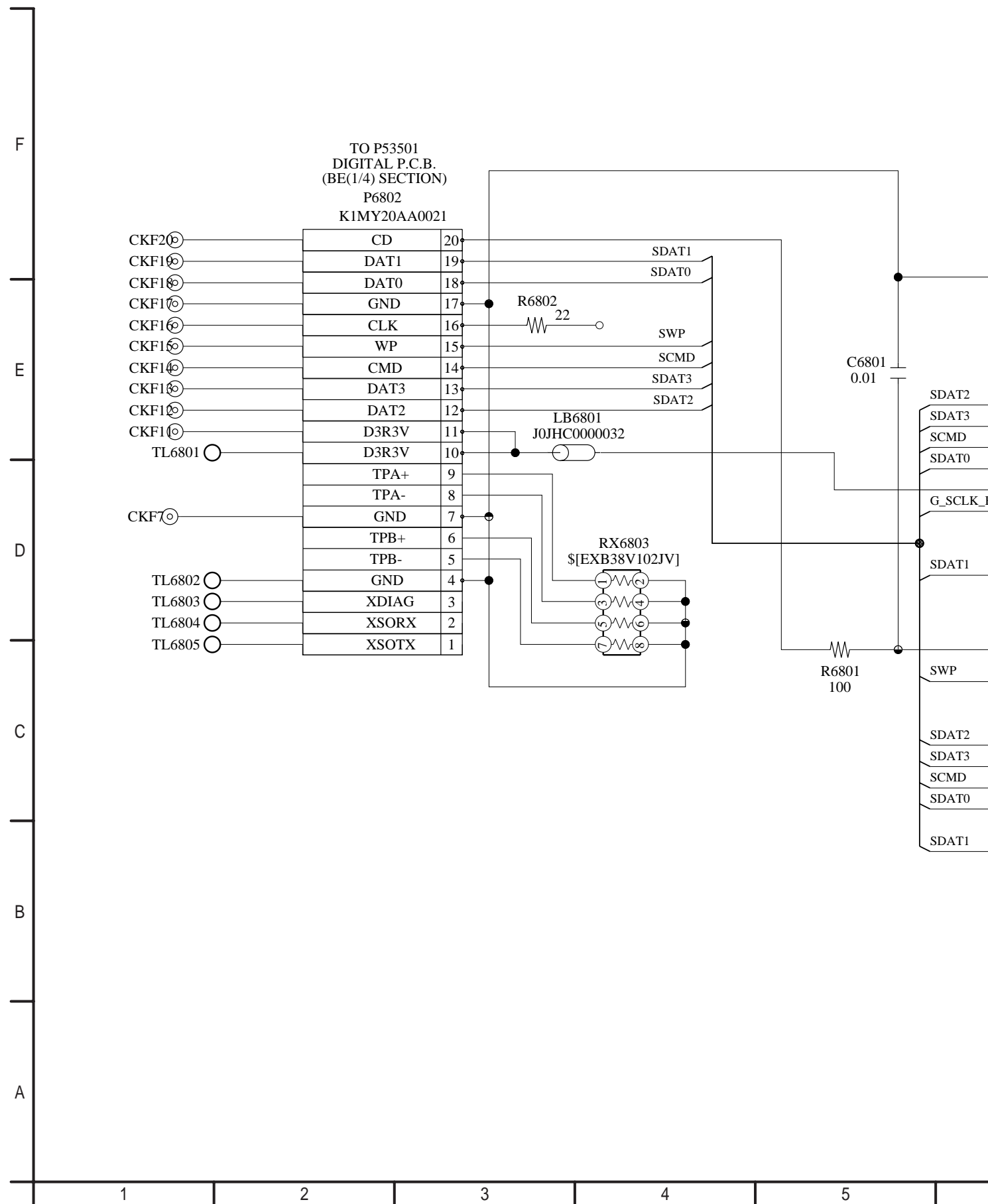


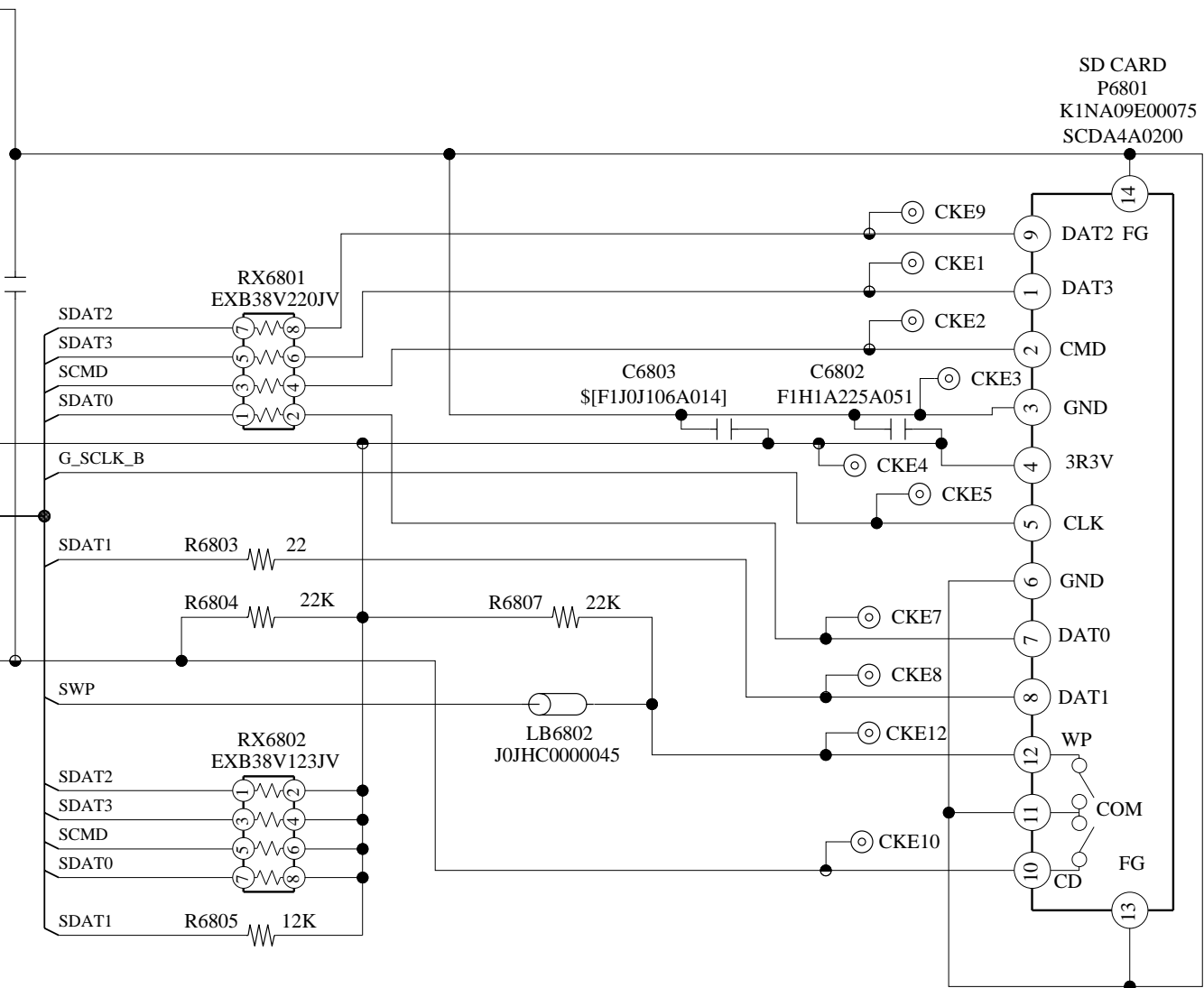
**IC56107**  
**INVERTER**  
**IC-DETAIL BLOCK DIAGRAM**



IC56103 Detail Block Diagram  
 IC56104 Detail Block Diagram  
 IC56105 Detail Block Diagram  
 IC56107 Detail Block Diagram  
 DMR-ES25P/PC IC-Detail Block Diagram

13.12. SD Card Schematic Diagram





NOTE:DO NOT USE THE PART NUMBER SHOWN ON THIS DRAWING FOR ORDERING.  
THE CORRECT PART NUMBER IS SHOWN IN THE PARTS LIST,AND MAY BE  
SLIGHTLY DIFFERNT OR AMENDED SINCE THIS DRAWING WAS PREPARED.

DMR-ES25P/PC  
SD Card Schematic Diagram

6

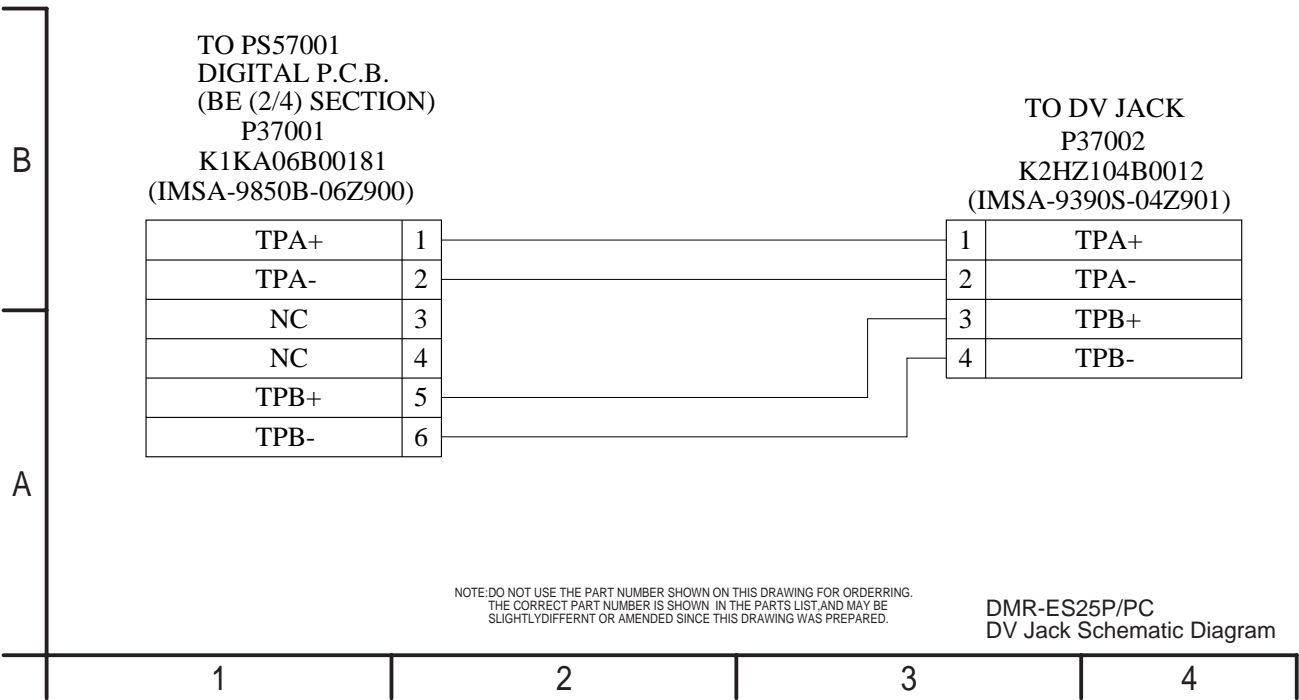
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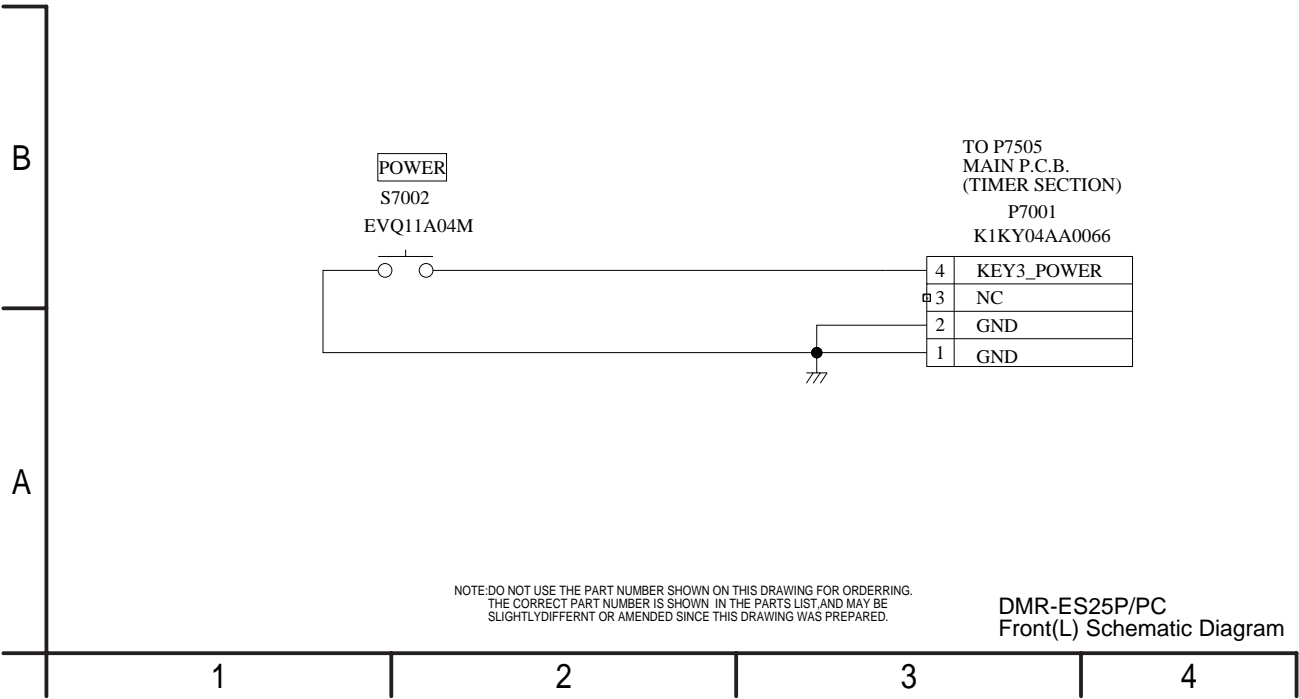
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13.13. DV Jack Schematic Diagram



13.14. Front (L) Schematic Diagram





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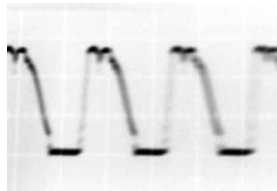


Ref No.	IC56101																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
REC	0	1.5	1.6	1.2	1.6	0	1.6	0	1.2	0	1.3	0	1.6	0	1.6	1.3	1.6	1.5	0	3.3
PLAY	0	1.5	1.6	1.2	1.6	0	1.6	0	1.2	0	1.3	0	1.6	0	1.6	1.3	1.6	1.5	0	3.3
STOP	0	1.5	1.6	1.2	1.6	0	1.6	0	1.2	0	1.3	0	1.6	0	1.6	1.3	1.6	1.5	0	3.3
Ref No.	IC56102																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
REC	0	0.7	1.5	1.2	1.0	0.9	1.2	0.7	1.7	0	1.6	0.7	1.1	0.9	0.9	1.5	1.1	0	0	3.3
PLAY	0	0.7	1.5	1.2	1.0	0.9	1.2	0.7	1.7	0	1.6	0.7	1.1	0.9	0.9	1.5	1.1	0	0	3.3
STOP	0	0.7	1.5	1.2	1.0	0.9	1.2	0.7	1.7	0	1.6	0.7	1.1	0.9	0.9	1.5	1.1	0	0	3.3
Ref No.	IC56103																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
REC	1.6	1.2	0	0	1.2	0	1.6	0	0	0	1.5	0	3.3	3.2	3.2	0	3.3	1.5	3.3	0
PLAY	1.6	1.2	0	0	1.2	0	1.6	0	0	0	1.5	0	3.3	3.2	3.2	0	3.3	1.5	3.3	0
STOP	1.6	1.2	0	0	1.2	0	1.6	0	0	0	1.5	0	3.3	3.2	3.2	0	3.3	1.5	3.3	0
Ref No.	IC56103																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
REC	3.3	0	0	0	0	0	0	3.2	1.5	0	0	-	-	0	0	0	-	0	0	0
PLAY	3.3	0	0	0	0	0	0	3.2	1.5	0	0	-	-	0	0	0	-	0	0	0
STOP	3.3	0	0	0	0	0	0	3.2	1.5	0	0	-	-	0	0	0	-	0	0	0
Ref No.	IC56103																			
MODE	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
REC	0	0	3.3	0	3.3	3.3	3.3	1.5	0	3.3	3.3	1.5	1.5	3.3	3.3	0	3.3	0	-	-
PLAY	0	0	3.3	0	3.3	3.3	3.3	1.5	0	3.3	3.3	1.5	1.5	3.3	3.3	0	3.3	0	-	-
STOP	0	0	3.3	0	3.3	3.3	3.3	1.5	0	3.3	3.3	1.5	1.5	3.3	3.3	0	3.3	0	-	-
Ref No.	IC56103																			
MODE	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
REC	0	3.3	-	-	3.3	0	3.3	1.2	1.2	0	3.3	0	0	0	3.3	0	0	0	3.3	0
PLAY	0	3.3	-	-	3.3	0	3.3	1.2	1.2	0	3.3	0	0	0	3.3	0	0	0	3.3	0
STOP	0	3.3	-	-	3.3	0	3.3	1.2	1.2	0	3.3	0	0	0	3.3	0	0	0	3.3	0
Ref No.	IC56103																			
MODE	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
REC	0	0	0	-	-	-	3.3	-	-	-	0	1.5	-	-	-	3.3	-	-	-	0
PLAY	0	0	0	-	-	-	3.3	-	-	-	0	1.5	-	-	-	3.3	-	-	-	0
STOP	0	0	0	-	-	-	3.3	-	-	-	0	1.5	-	-	-	3.3	-	-	-	0
Ref No.	IC56103																			
MODE	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120
REC	-	-	-	-	-	-	-	0	-	-	-	3.3	1.5	-	-	-	0	-	-	-
PLAY	-	-	-	-	-	-	-	0	-	-	-	3.3	1.5	-	-	-	0	-	-	-
STOP	-	-	-	-	-	-	-	0	-	-	-	3.3	1.5	-	-	-	0	-	-	-
Ref No.	IC56103																			
MODE	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140
REC	3.3	-	-	-	0	-	0	0	0	0	1.5	0	1.5	0	0	0	0	3.3	0	0
PLAY	3.3	-	-	-	0	-	0	0	0	0	1.5	0	1.5	0	0	0	0	3.3	0	0
STOP	3.3	-	-	-	0	-	0	0	0	0	1.5	0	1.5	0	0	0	0	3.3	0	0
Ref No.	IC56103																			
MODE	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160
REC	0	0	0	0	0	0	0	0	0	0	3.3	1.5	1.5	0.9	1.2	1.6	0	0.7	0.9	1.0
PLAY	0	0	0	0	0	0	0	0	0	0	3.3	1.5	1.5	0.9	1.2	1.6	0	0.7	0.9	1.0
STOP	0	0	0	0	0	0	0	0	0	0	3.3	1.5	1.5	0.9	1.2	1.6	0	0.7	0.9	1.0
Ref No.	IC56103																			
MODE	161	162	163	164																
REC	0.9	1.5	1.6	1.6																
PLAY	0.9	1.5	1.6	1.6																
STOP	0.9	1.5	1.6	1.6																
Ref No.	IC56104																			
MODE	1	2	3	4	5	6	7	8		1	2	3	4	5		1	2	3	4	5
REC	3.3	0	1.3	0	4.8	0	0	3.9		5.7	0	4.8	0	5.0		0	1.6	0	1.5	3.3
PLAY	3.3	0	1.3	0	4.8	0	0	3.9		5.7	0	4.8	0	5.0		0	1.6	0	1.5	3.3
STOP	3.3	0	1.3	0	4.8	0	0	3.9		5.7	0	4.8	0	5.0		0	1.6	0	1.5	3.3
Ref No.	IC56105																			
MODE	E	C	B		E	C	B		E	C	B		1	2	3		1	2	3	
REC	0	4.9	0		0	0	0.6		0	3.7	0		3.3	5.0	3.3		3.3	5.0	3.3	
PLAY	0	4.9	0		0	0	0.6		0	3.7	0		3.3	5.0	3.3		3.3	5.0	3.3	
STOP	0	4.9	0		0	0	0.6		0	3.7	0		3.3	5.0	3.3		3.3	5.0	3.3	
Ref No.	IC56105																			
MODE	E	C	B		E	C	B													
REC	3.7	3.5	3.7		0	3.5	0													
PLAY	3.7	3.5	3.7		0	3.5	0													
STOP	3.7	3.5	3.7		0	3.5	0													

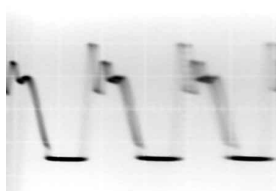
Ref No.	IC1150					IC1200					IC1302									
MODE	1	2	3	4	5		1	2	3		1	2	3	4	5					
REC	2.4	1.8	0	13.2	-560		5.0	2.5	0		6.1	4.9	5.1	2.6	0					
PLAY	2.4	1.8	0	13.2	-560		5.0	2.5	0		6.1	4.9	5.1	2.6	0					
STOP	2.4	1.8	0	13.2	-560		5.0	2.5	0		6.1	4.9	5.1	2.6	0					
Ref No.	IC1501					IC1502					IC1503									
MODE	1	2	3	4	5		1	2	3	4	5		1	2	3	4	5	6	7	
REC	6.1	0	6.1	5.2	5.2		6.1	0	4.9	6.1	5.0		5.0	-	0	3.4	4.9	0	6.1	
PLAY	6.1	0	6.1	5.2	5.2		6.1	0	4.9	6.1	5.0		5.0	-	0	3.4	4.9	0	6.1	
STOP	6.1	0	6.1	5.2	5.2		6.1	0	4.9	6.1	5.0		5.0	-	0	3.4	4.9	0	6.1	
Ref No.	IC1505																			
MODE	1	2	3	4	5															
REC	6.1	4.9	3.3	-	0															
PLAY	6.1	4.9	3.3	-	0															
STOP	6.1	4.9	3.3	-	0															
Ref No.	IC3001																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
REC	1.4	0	2.5	5.0	1.8	4.9	1.4	4.7	0.1	2.7	0	1.4	-	1.4	0	0	2.7	0	1.4	4.9
PLAY	1.4	0	2.5	5.0	1.8	4.9	1.4	4.7	0.1	2.7	0	1.4	-	1.4	0	0	2.7	0	1.4	4.9
STOP	1.4	0	2.5	5.0	1.8	1.6	1.4	4.7	0.1	2.7	0	1.4	-	1.4	0	0	2.7	0	1.4	4.9
Ref No.	IC3001																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
REC	1.4	0	0.1	2.7	4.9	1.7	1.8	1.9	1.9	2.2	0	2.2	2.2	2.2	2.2	1.7	1.7	0	1.8	5.0
PLAY	1.4	0	0.1	2.7	4.9	1.7	1.8	1.9	1.9	2.2	0	2.2	2.2	2.2	2.2	1.7	1.7	0	1.8	5.0
STOP	1.4	0	0.1	2.7	4.9	1.8	1.8	1.9	1.9	2.2	0	2.2	2.2	2.2	2.2	1.7	1.7	0	1.8	5.0
Ref No.	IC3001																			
MODE	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
REC	2.8	0	2.8	4.9	2.8	2.8	1.8	-	2.8	0	2.8	4.9	2.8	2.9	1.1	0	5.1	5.1	5.1	0.1
PLAY	2.8	0	2.8	4.9	2.8	2.8	1.8	-	2.8	0	2.8	4.9	2.8	2.9	1.1	0	5.1	5.1	5.1	0.1
STOP	2.8	0	2.8	4.9	2.8	2.8	1.8	-	2.8	0	2.8	4.9	2.8	2.9	1.1	0	5.1	5.1	5.1	0.1
Ref No.	IC3001																			
MODE	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
REC	-	0.8	0.8	5.0	1.3	-	1.8	-	2.0	0	-	5.0	-	0	-	0	0	5.0	-	0
PLAY	-	0.8	0.8	5.0	1.3	-	1.8	-	2.0	0	-	5.0	-	0	-	0	0	5.0	-	0
STOP	-	0.8	0.8	5.0	1.3	-	1.8	-	2.0	0	-	5.0	-	0	-	0	0	5.0	-	0
Ref No.	IC4001																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
REC	-	4.5	4.5	-	-	-	-	3.4	4.5	4.5	4.5	4.5	4.5	4.5	0	4.5	0	-	0	5.0
PLAY	-	4.5	4.5	-	-	-	-	3.4	4.5	4.5	4.5	4.5	4.5	4.5	0	4.5	0	-	0	5.0
STOP	-	4.5	4.5	-	-	-	-	3.4	4.5	4.5	4.5	4.5	4.5	4.5	0	4.5	0	-	0	5.0
Ref No.	IC4001																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32								
REC	5.0	0	4.5	4.5	4.5	4.5	4.5	4.5	4.5	9.0	4.5	4.5								
PLAY	5.0	0	4.5	4.5	4.5	4.5	4.5	4.5	4.5	9.0	4.5	4.5								
STOP	5.0	0	4.5	4.5	4.5	4.5	4.5	4.5	4.5	9.0	4.5	4.5								
Ref No.	IC4002					IC4003					IC4901									
MODE	1	2	3	4	5		1	2	3	4	5		1	2	3					
REC	1.3	0	4.8	6.1	5.1		4.8	0	1.3	9.0	12.9		1.7	4.9	0					
PLAY	1.3	0	4.8	6.1	5.1		4.8	0	1.3	9.0	12.9		1.7	4.9	0					
STOP	1.3	0	4.8	6.1	5.1		4.8	0	1.3	9.0	12.9		1.7	4.9	0					
Ref No.	IC7401																			
MODE	1	2	3	4	5	6	7	8												
REC	0	0	0	0	5.1	5.1	0	5.1												
PLAY	0	0	0	0	5.1	5.1	0	5.1												
STOP	0	0	0	0	5.1	5.1	0	5.1												
Ref No.	IC7501																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
REC	0	5.0	0	4.9	4.9	4.9	4.9	4.9	5.0	1.3	2.1	0	0.5	0.6	0	5.0	5.0	5.0	4.7	0
PLAY	0	5.0	0	4.9	4.9	4.9	4.9	4.9	5.0	1.3	2.1	0	0.5	0.6	0	5.0	5.0	5.0	4.7	0
STOP	0	5.0	0	4.9	4.9	4.9	4.9	4.9	5.0	1.3	2.1	0	0.5	0.6	0	5.0	5.0	5.0	4.7	0
Ref No.	IC7501																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
REC	0	4.7	4.7	5.0	4.9	4.9	4.9	0.6	5.0	-	0	-	3.1	4.9	4.9	4.9	4.8	0	0	-
PLAY	0	4.7	4.7	5.0	4.9	4.9	4.9	0.3	5.0	-	0	-	3.1	4.9	4.9	4.9	4.8	0	0	-
STOP	0	4.7	4.7	5.0	4.9	4.9	4.9	0.6	5.0	-	0	-	3.1	4.9	4.9	4.9	4.8	0	0	-
Ref No.	IC7501																			
MODE	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
REC	-	-18.1	-18.1	-18.1	-17.7	-17.7	-17.7	-17.7	-21.1	-21.1	-14.3	-17.6	-17.6	-17.6	-14.2	-14.2	-21.0	-21.0	-10.8	-17.6
PLAY	-	-18.1	-18.1	-18.1	-17.7	-17.7	-17.7	-17.7	-17.6	-17.6	-10.8	-21.1	-21.1	-17.6	-0.6	-4.0	-14.3	-10.8	-4.0	-10.8
STOP	-	-18.1	-18.1	-18.1	-17.7	-17.7	-17.7	-17.7	-21.1	-21.1	-14.3	-17.6	-17.6	-17.6	-14.2	-14.2	-21.0	-21.0	-10.8	-17.6
Ref No.	IC7501																			
MODE	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
REC	-17.6	-17.6	-17.6	-17.9	-	-	-	-	-	-	-	-	-	-0.2	-0.4	-	-	0	0	0
PLAY	-21.1	-21.1	-21.4	-4.4	-	-	-	-	-	-	-	-	-	-0.2	-0.4	-	-	0	0	0
STOP	-17.6	-17.6	-17.6	-17.9	-	-	-	-	-	-	-	-	-	-0.2	-0.4	-	-	0	0	0

Ref No.	IC7501																			
MODE	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
REC	-	0	0	0	-	-	-	0	0	-21.6	-	-	-	0	0	-	4.9	-	0	4.9
PLAY	-	0	0	0	-	-	-	0	0	-21.6	-	-	-	0	0	-	4.9	-	0	4.9
STOP	-	0	0	0	-	-	-	0	0	-21.6	-	-	-	0	0	-	4.9	-	0	4.9
Ref No.	IC7512					IC7514														
MODE	1	2	3	4	5		1	2	3	4	5									
REC	0	0	-	4.9	5.0		4.9	5.2	0	-	-									
PLAY	0	0	-	4.9	5.0		4.9	5.2	0	-	-									
STOP	0	0	-	4.9	5.0		4.9	5.2	0	-	-									
Ref No.	Q1200				Q4001				Q4002				Q7401				Q7402			
MODE	1	2	3	4		E	C	B		E	C	B		S	D	G		S	D	G
REC	6.0	5.0	0	1.8		0	0	-0.2		0	0	-0.2		3.3	5.1	3.3		3.3	5.1	3.3
PLAY	6.0	5.0	0	1.8		0	0	-0.2		0	0	-0.2		3.3	5.1	3.3		3.3	5.1	3.3
STOP	6.0	5.0	0	1.8		0	0	-0.3		0	0	-0.3		3.3	5.1	3.3		3.3	5.1	3.3
Ref No.	Q7502			Q7503			Q7504			Q7510			Q7511							
MODE	E	C	B		E	C	B		E	C	B		E	C	B		E	C	B	
REC	0	9.1	-0.2		0	-0.2	-0.4		3.3	4.9	3.3		3.3	5.1	3.3		3.3	4.9	3.3	
PLAY	0	9.3	-0.1		0	-0.1	-0.4		3.3	4.9	3.3		3.3	5.1	3.3		3.3	4.9	3.3	
STOP	0	9.1	-0.2		0	-0.2	-0.4		3.3	4.9	3.		3.3	5.1	3.3		3.3	4.9	3.	
Ref No.	Q7513			Q7514			Q7801													
MODE	S	D	G		E	C	B		E	C	B									
REC	3.3	3.3	4.9		3.3	5.1	3.3		2.6	0	2.0									
PLAY	3.3	3.3	4.9		3.3	5.1	3.3		2.6	0	2.0									
STOP	3.3	3.3	4.9		3.3	5.1	3.3		2.6	0	2.0									
Ref No.	QR4001			QR4002			QR4003			QR7503										
MODE	E	C	B		E	C	B		E	C	B		E	C	B					
REC	0	0	2.3		5.1	-0.2	5.1		0	5.1	0		5.1	0	5.1					
PLAY	0	0	2.3		5.1	-0.2	5.1		0	5.1	0		5.1	0	5.1					
STOP	0	0	2.3		5.1	-0.2	5.1		0	5.1	0		5.1	0	5.1					

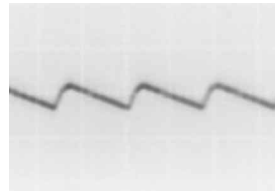
[illegible]



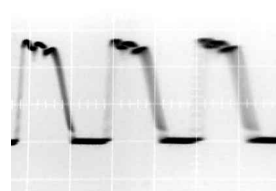
T1150-3 STOP  
30Vp-p ( $5\mu\text{sec.div}$ )



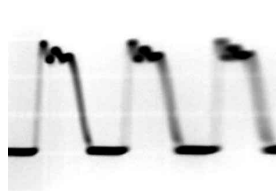
T1150-4 STOP  
360Vp-p ( $5\mu\text{sec.div}$ )



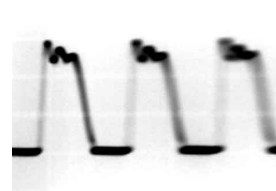
T1150-6 STOP  
20Vp-p ( $5\text{m sec.div}$ )



T1150-7 STOP  
10Vp-p ( $5\mu\text{sec.div}$ )



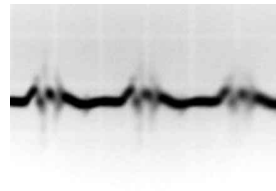
T1150-8 STOP  
30Vp-p ( $5\mu\text{sec.div}$ )



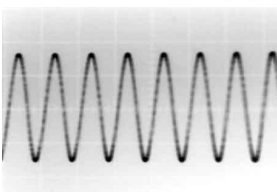
T1150-11,12 STOP  
15Vp-p ( $5\mu\text{sec.div}$ )



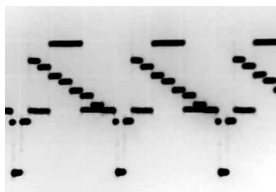
IC1150-1 STOP  
9.0Vp-p ( $5\mu\text{sec.div}$ )



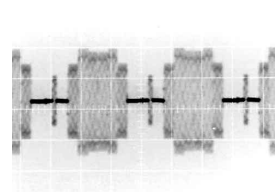
IC1150-2 STOP  
0.5Vp-p ( $5\mu\text{sec.div}$ )



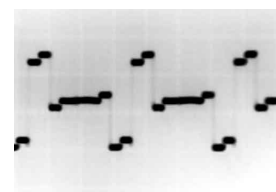
P7401-17,19 REC/PLAY  
0.8Vp-p ( $1\text{m sec.div}$ )



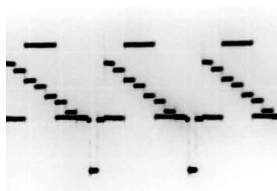
P7401-39 REC/PLAY  
1.0Vp-p ( $20\mu\text{sec.div}$ )



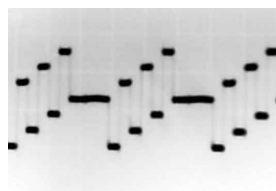
P7401-43 REC/PLAY  
0.8Vp-p ( $20\mu\text{sec.div}$ )



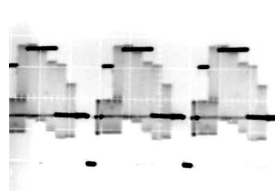
P7401-47 REC/PLAY  
0.6Vp-p ( $20\mu\text{sec.div}$ )



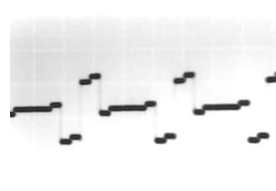
P7401-51 REC/PLAY  
1.0Vp-p ( $20\mu\text{sec.div}$ )



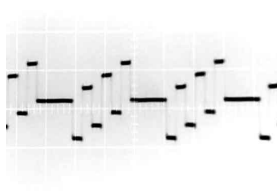
P7401-55 REC/PLAY  
0.6Vp-p ( $20\mu\text{sec.div}$ )



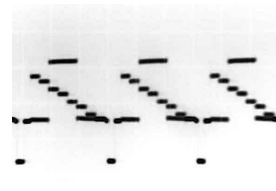
P7401-59 REC/PLAY  
1.0Vp-p ( $20\mu\text{sec.div}$ )



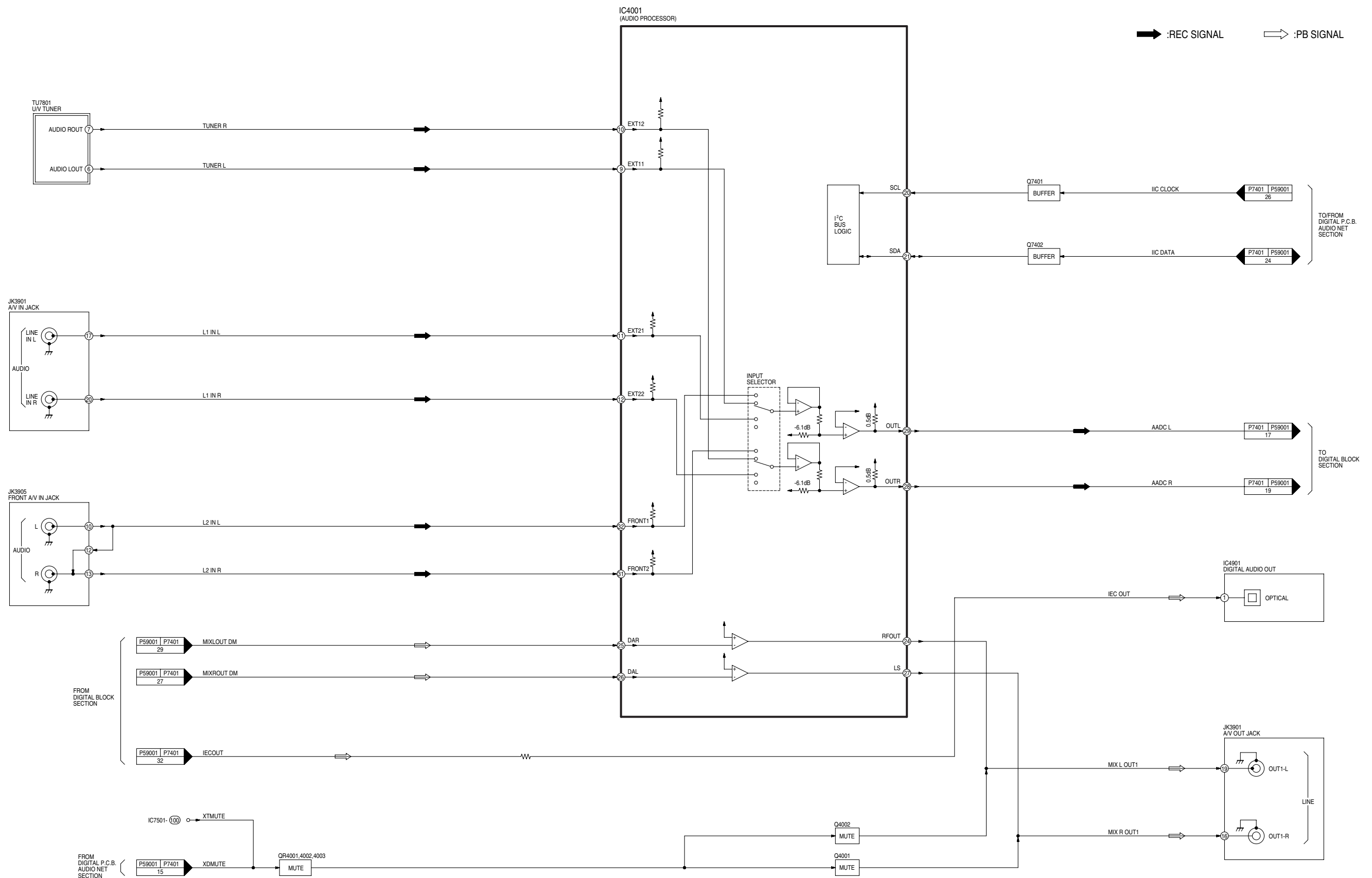
JK3903-2 REC/PLAY  
1.0Vp-p ( $20\mu\text{sec.div}$ )



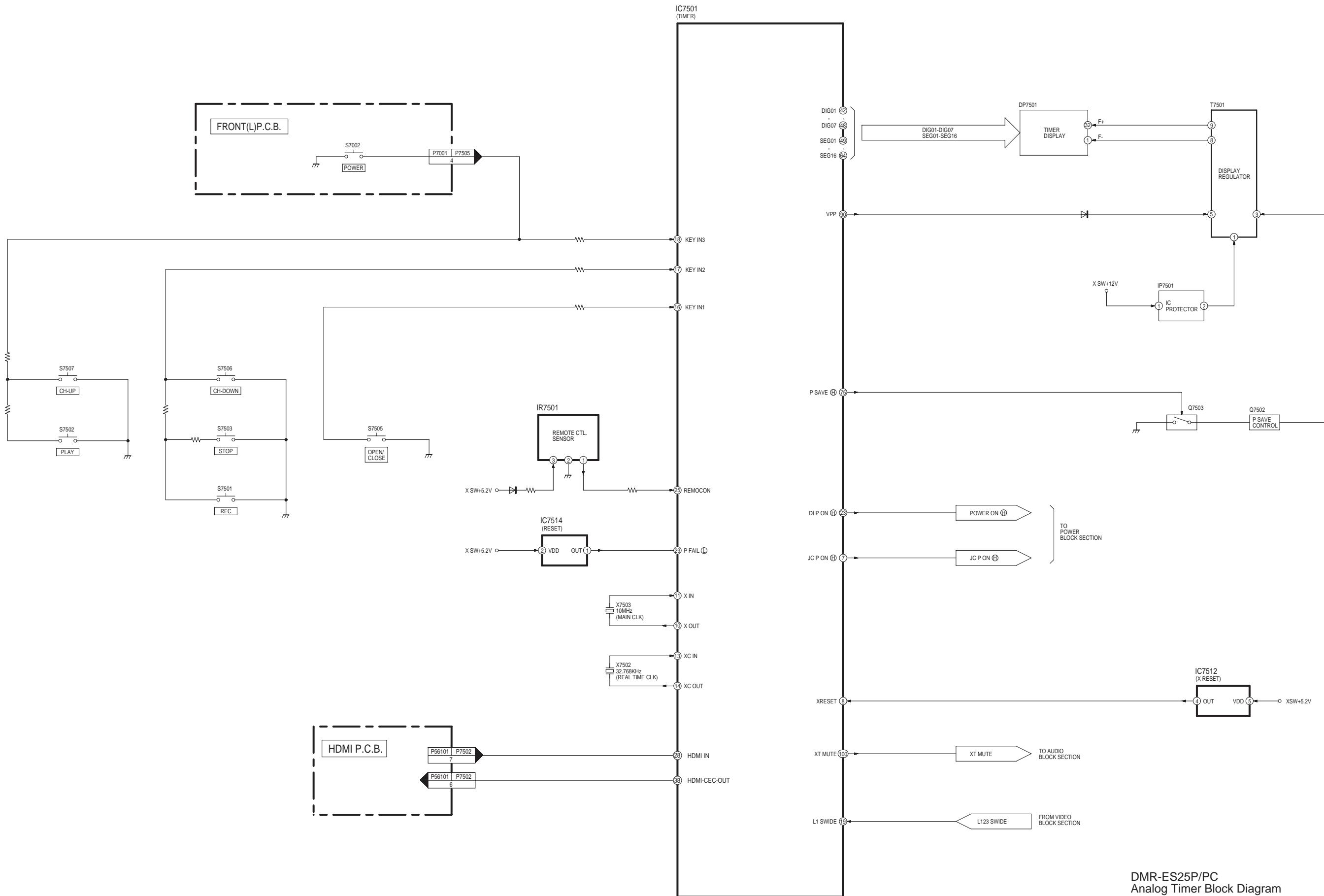
JK3903-3 REC/PLAY  
1.0Vp-p ( $20\mu\text{sec.div}$ )



JK3903-4 REC/PLAY  
2.0Vp-p ( $20\mu\text{sec.div}$ )

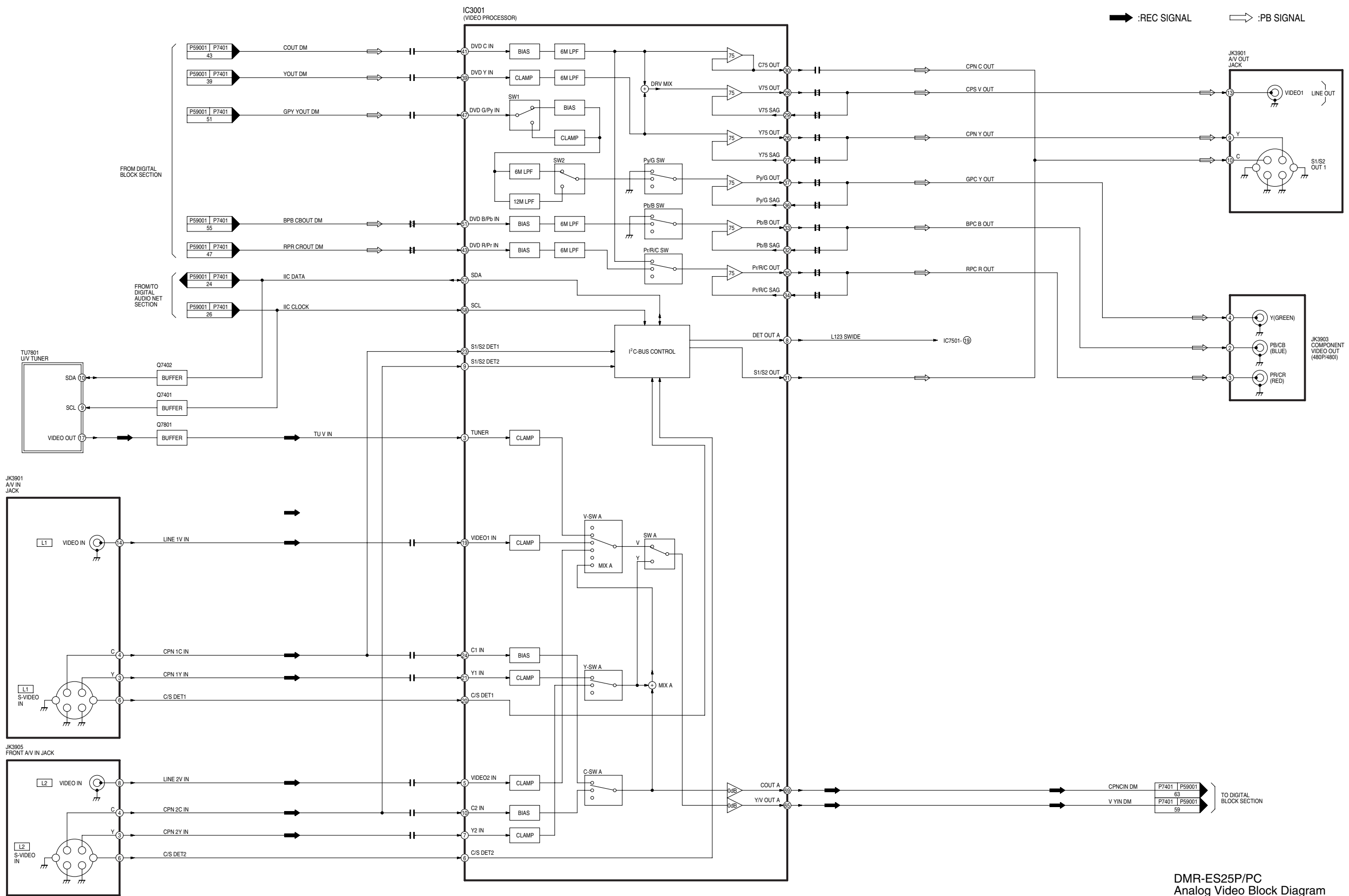


DMR-ES25P/PC  
Analog Audio Block Diagram

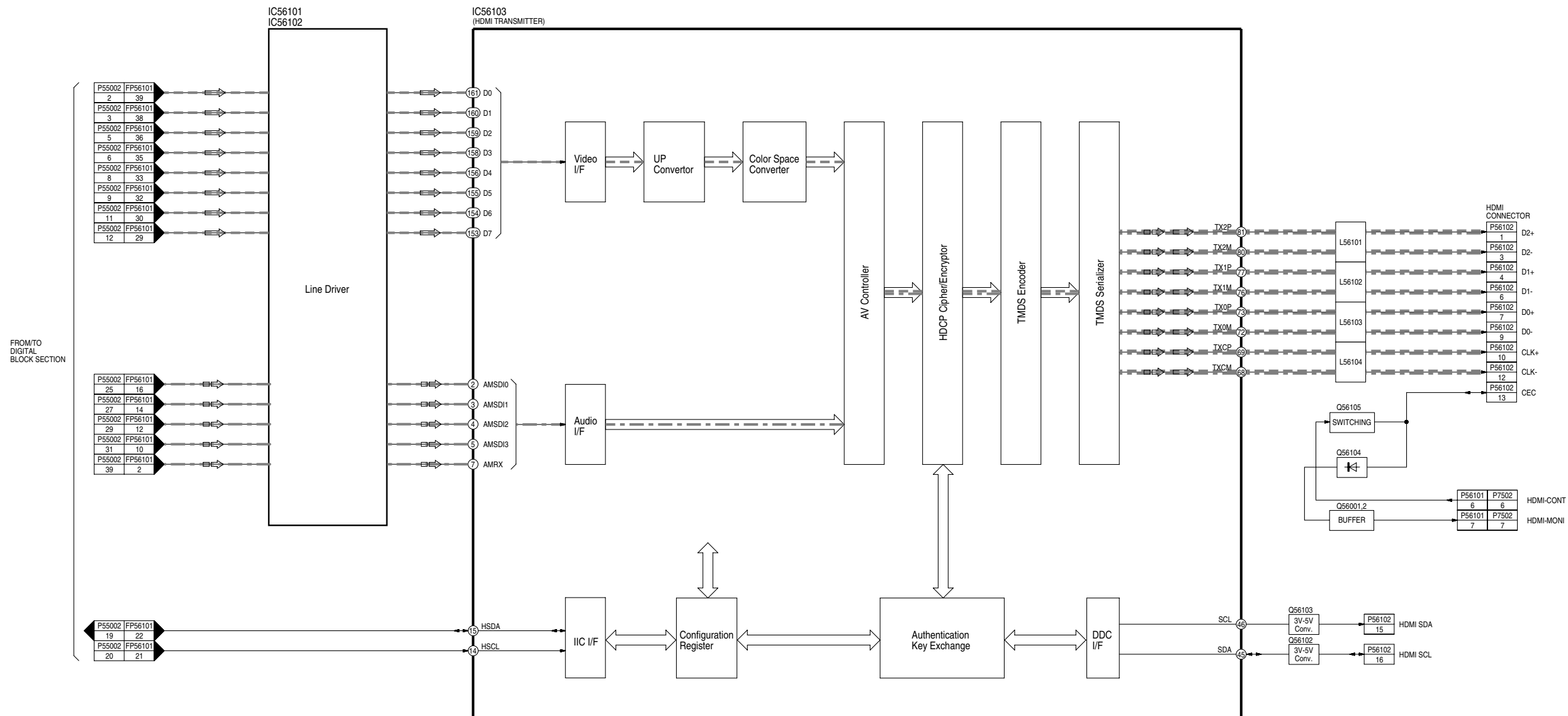


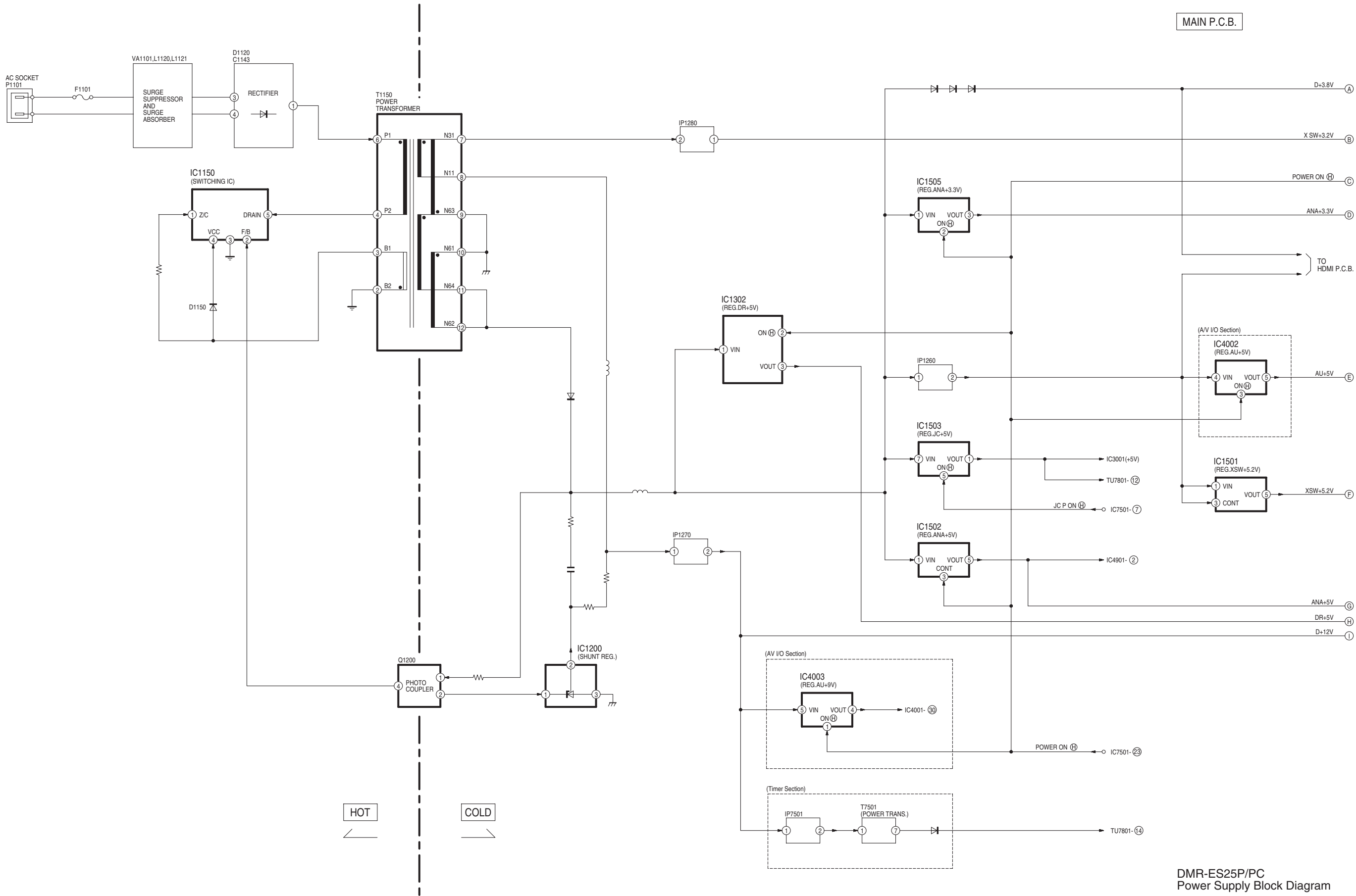
DMR-ES25P/PC  
Analog Timer Block Diagram

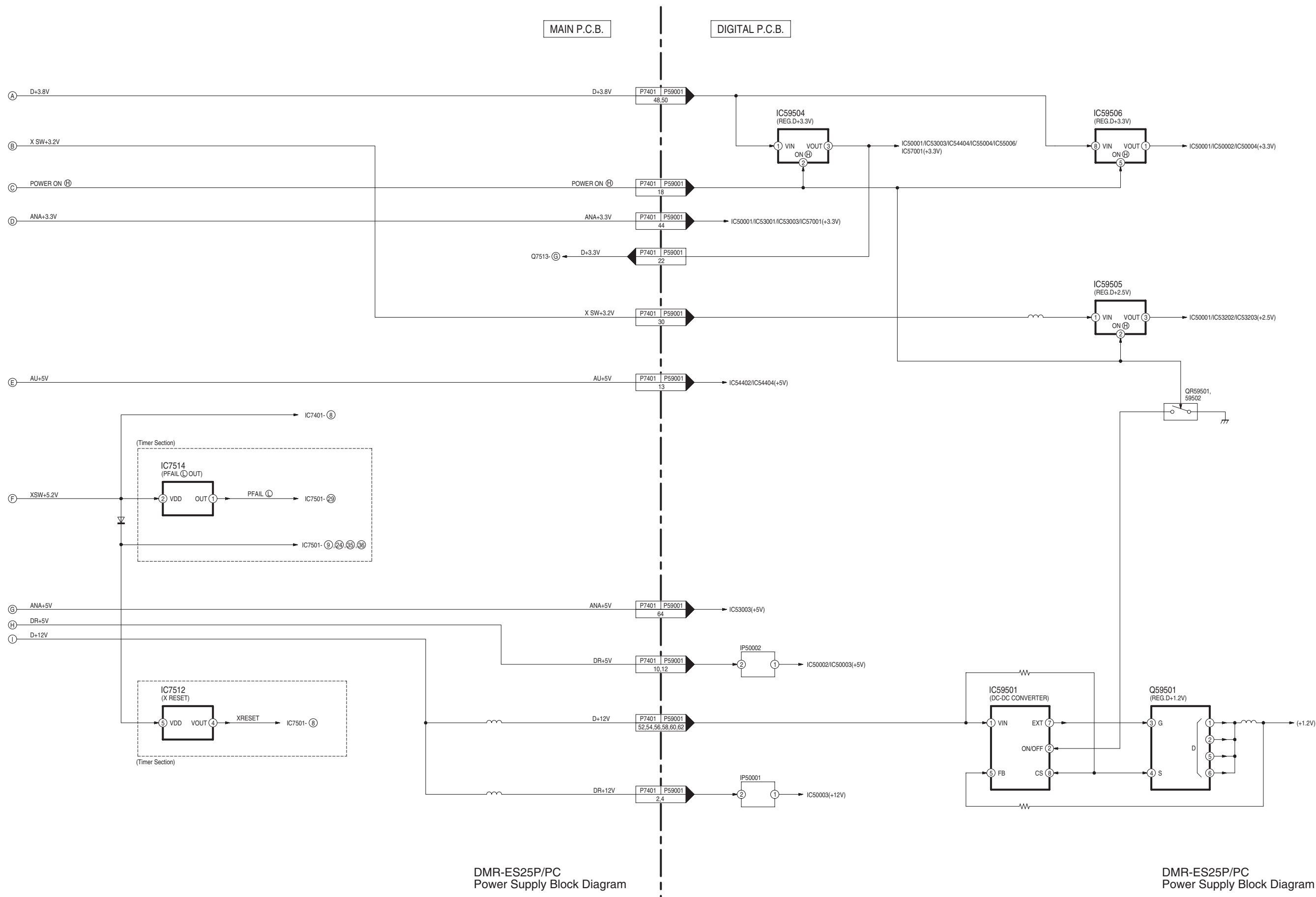




DMR-ES25P/PC  
Analog Video Block Diagram



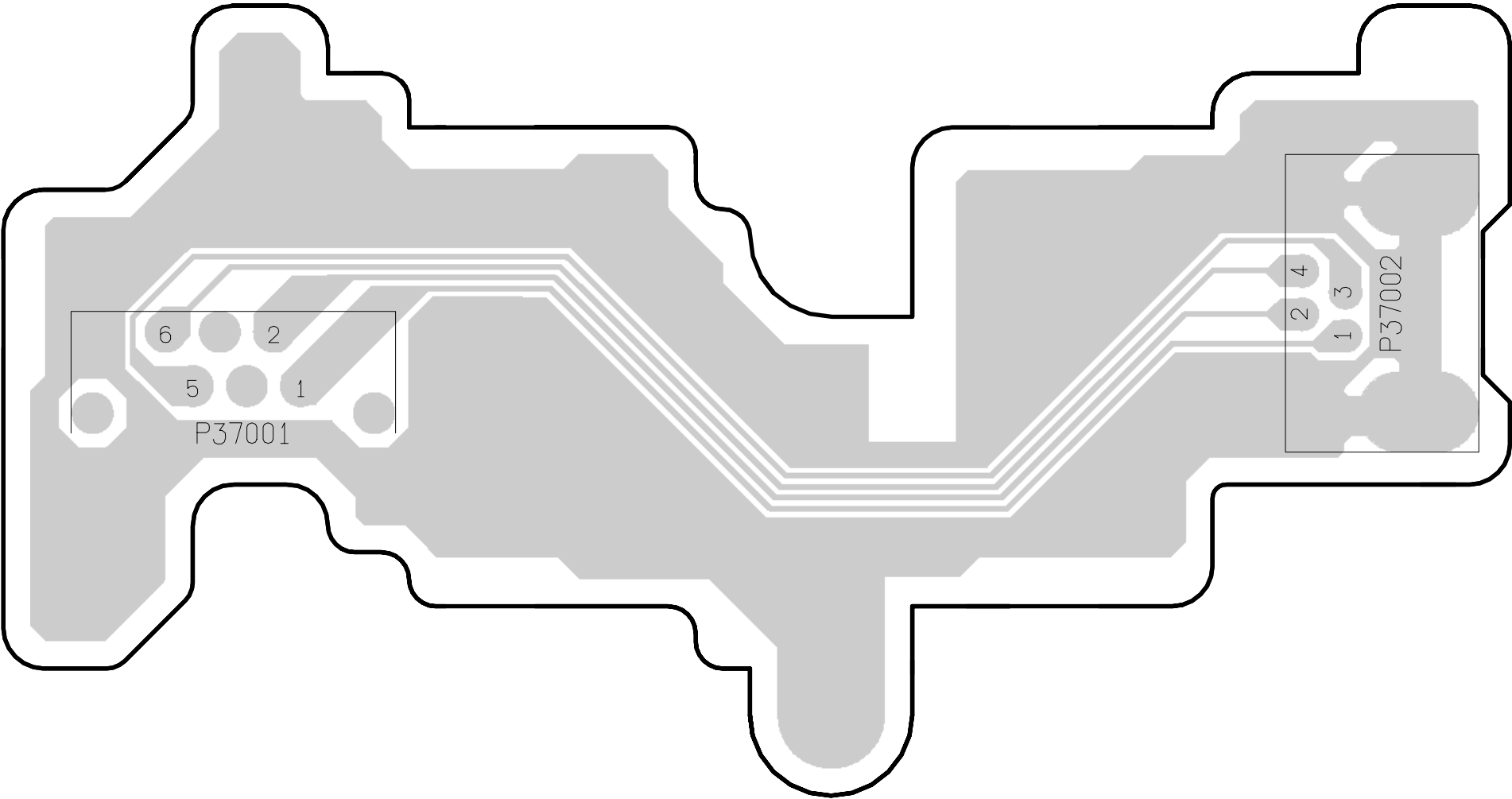




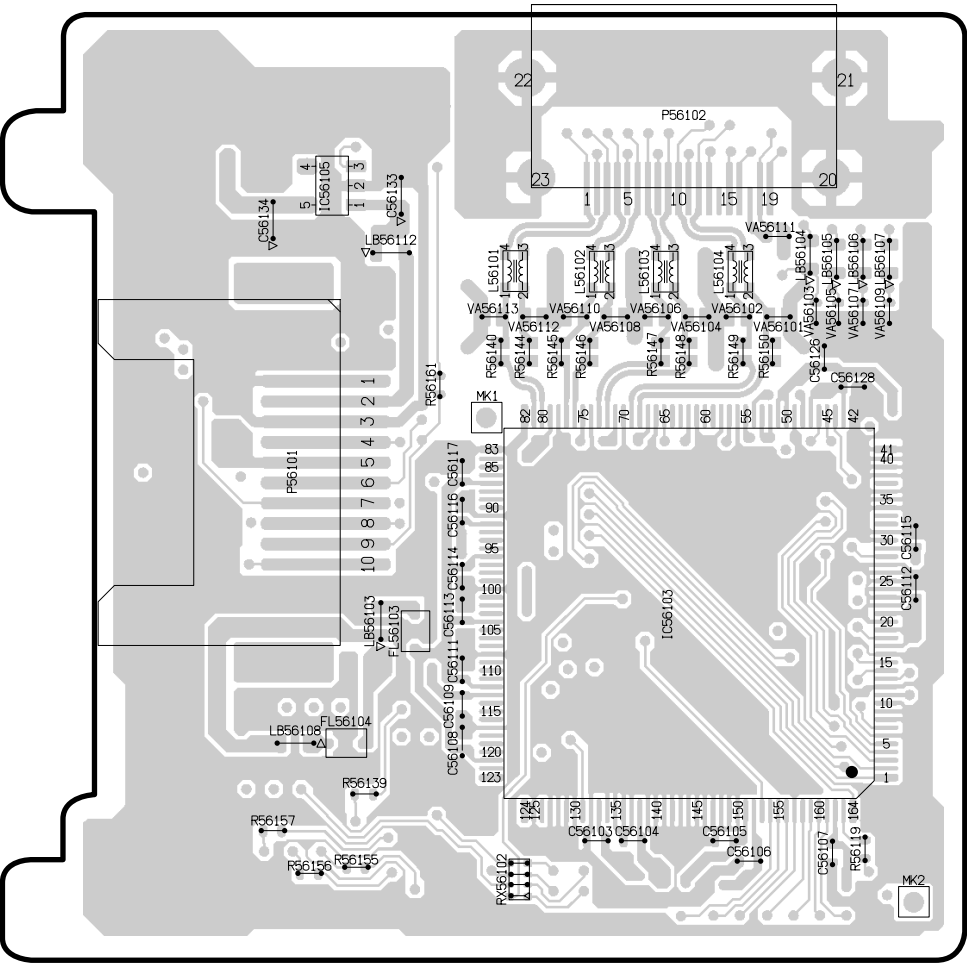
DMR-ES25P/PC  
Power Supply Block Diagram

DMR-ES25P/PC  
Power Supply Block Diagram

DV Jack P.C.B.

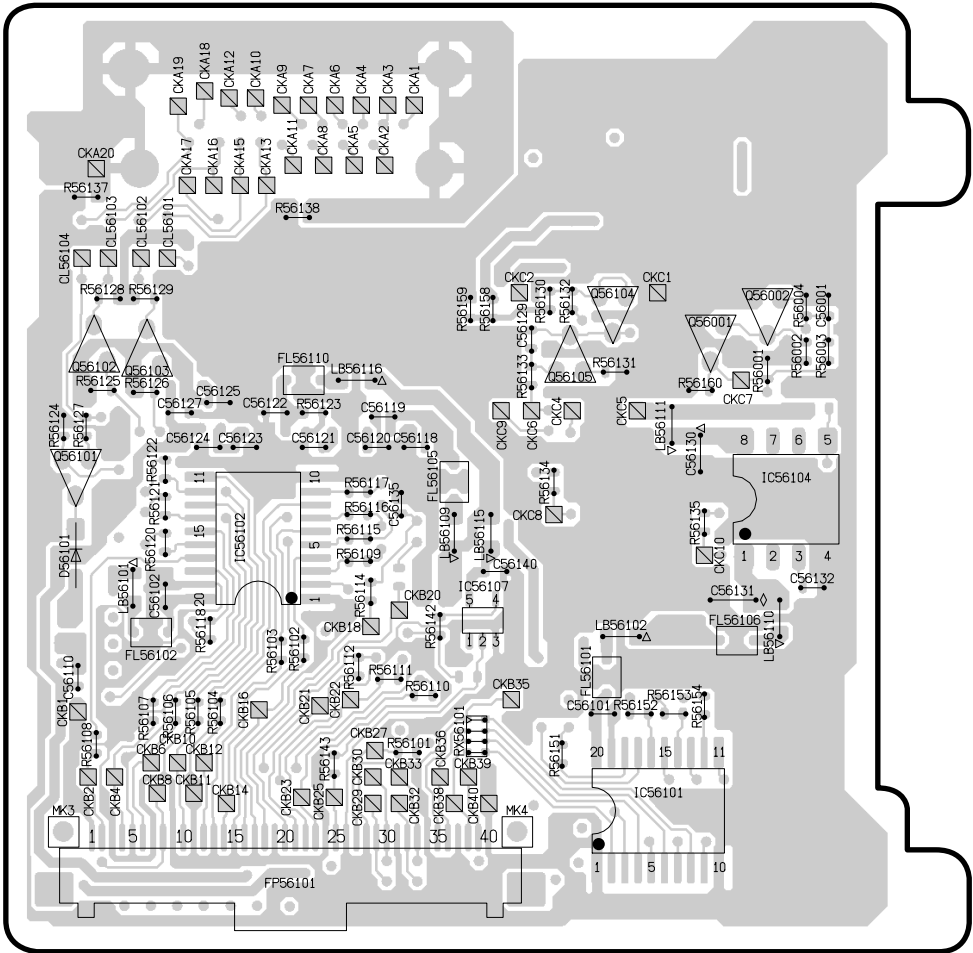


HDMI P.C.B.



(Component Side)

DMR-ES25P/PC  
HDMI P.C.B. (VEP73137A)



(Foil Side)

DMR-ES25P/PC  
HDMI P.C.B. (VEP73137A)